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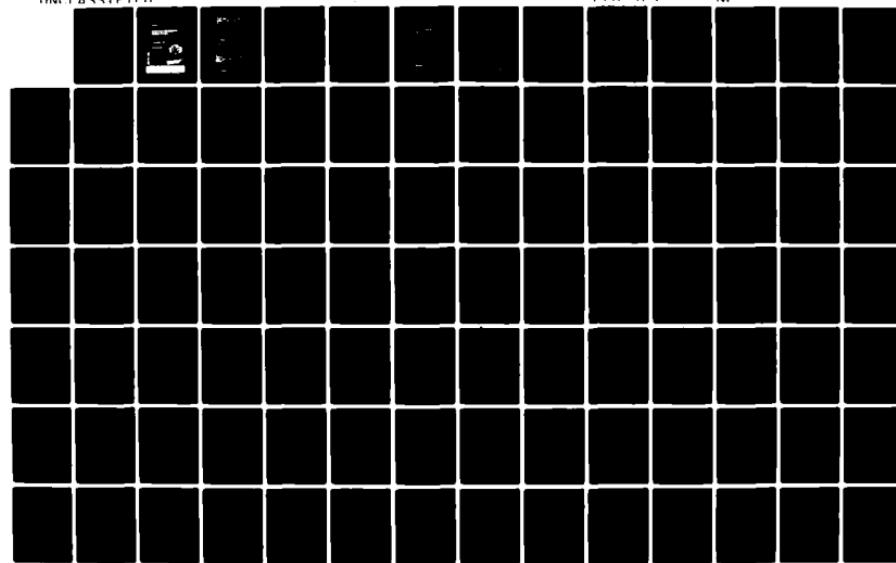
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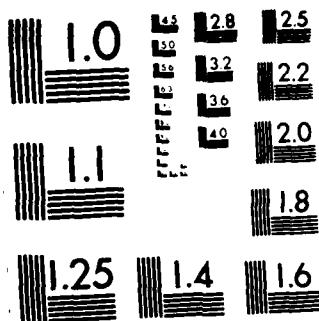
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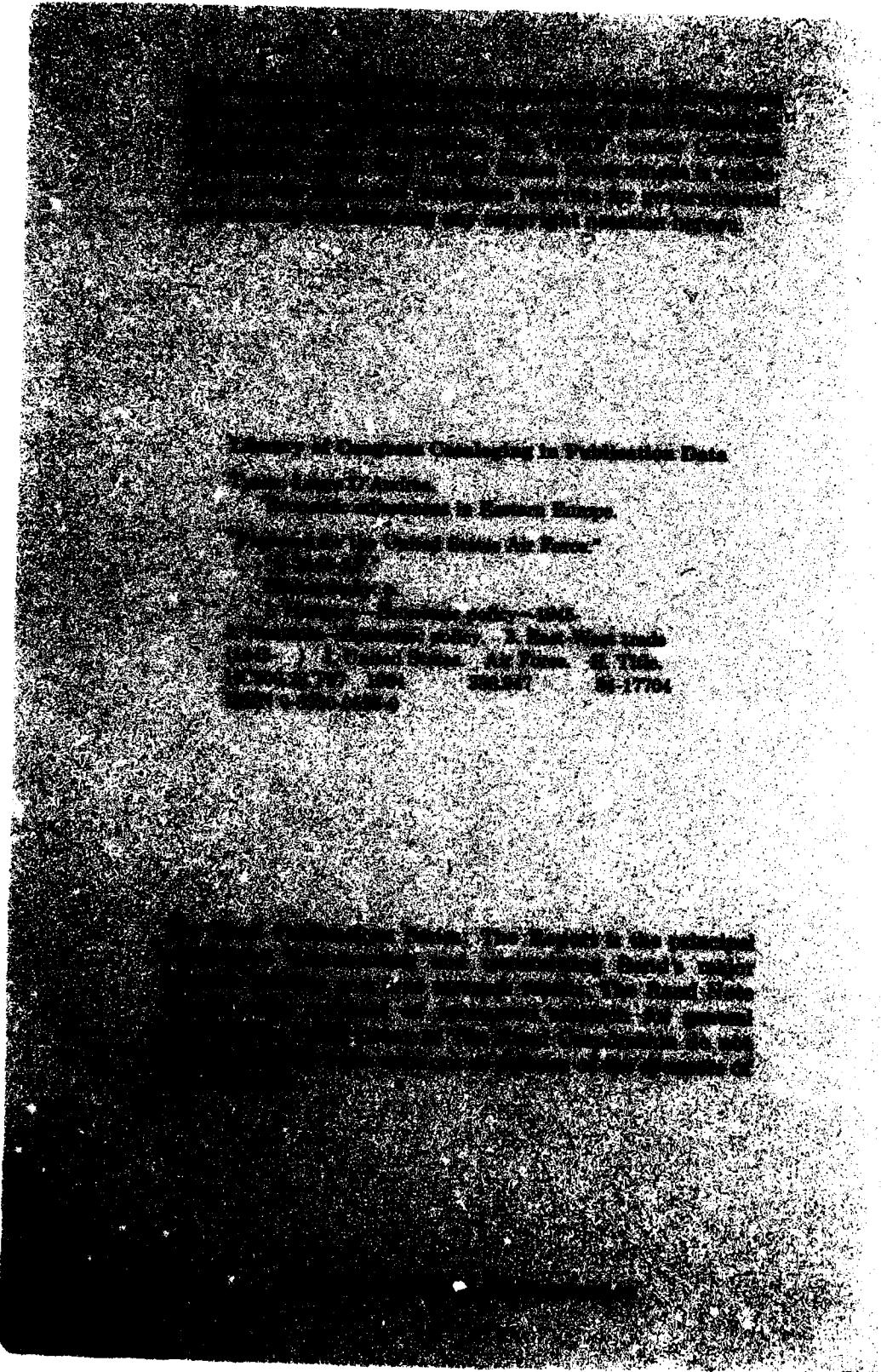
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↳ This report consists of case studies of Hungary and Romania that reveal how individual East European countries have adjusted differently to the external economic shocks of 1973-1975 and 1978-1982. Among the author's conclusions, she finds that, during the next few years, Hungarian economic performance will be shaped by external factors over which the Hungarians have little or no control. Most important will be trends in external capital market conditions and relative prices. The author anticipates that Hungarian terms of trade with the Soviet Union will deteriorate by nearly one-third between 1980 and 1985. Romania, the author concludes, is confronting limits on its extensive growth strategy. Without reforms, Romania's adjustment will continue to require enforced austerity at home. Another response may be a turn to the Soviet bloc market to economize on hard-currency imports, but this may require political concessions on Romania's part that are unacceptable to that country's leadership.

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Economic Adjustment in Eastern Europe

Laura D'Andrea Tyson

September 1984

A Project AIR FORCE report
prepared for the
United States Air Force



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PREFACE

This report was prepared as part of the Project AIR FORCE study, "Soviet Vulnerabilities in Eastern Europe," under the direction of A. Ross Johnson. The project seeks to illuminate the security issues posed for the United States by the problems and opportunities the USSR will face in the 1980s in Eastern Europe. It addresses economic, political, and military dimensions of the challenge to Soviet interests in Eastern Europe.

The report examines how the economies of two East European countries, Hungary and Romania, have responded to external shocks created by changing conditions in the world and intrabloc markets in the 1970s and to internal economic difficulties during that decade. It is intended as a contribution to understanding the future viability of the East European economic systems and the nature of the economic issues that will affect Soviet-East European relations for the remainder of the 1980s. Political conditions in Hungary and Romania are analyzed in a forthcoming companion report.

The author is Associate Professor of Economics at the University of California, Berkeley, and a consultant to The Rand Corporation.

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SUMMARY

Sharp changes in the terms of trade between manufactured goods and raw materials (especially energy products) and slowdowns in world trade in 1973-75 and again in 1978-82 had adverse consequences for Eastern Europe (as they did for most developing economies and many industrialized countries). Eastern Europe's delayed responses to these changes were partly similar to those of developing countries and led to growth slowdowns, high levels of indebtedness, temporary interruptions in debt servicing, and import restrictions. But structural factors peculiar to the East European planned economies hindered adjustment to the 1973-75 international economic downturn and left Eastern Europe with large trade deficits and thus more vulnerable to post-1978 international economic shocks than developing or industrialized countries.

During the 1973-75 economic shocks, easy credit-market conditions made it possible and even desirable for the East European countries to respond passively to deteriorating balance of payments by borrowing. This response is understandable for both structural and policy reasons: At a structural level, the control of policymakers over both the amount and composition of domestic expenditure (absorption) was weak. They lacked the means to quickly reallocate resources among sectors and investments. They were constrained by social norms that precluded abrupt adjustments in wages and consumption and by a system of incentives that encouraged a strong investment drive. And at a policy level, East European leaders were reluctant to sacrifice growth and development objectives. They were also reluctant to reduce domestic expenditure, especially consumption, because of the political costs of doing so.

The adverse consequences of external economic shocks were thus compounded by errors in internal policy responses related to systemic features of the centrally planned East European economies. Faced with the need to reduce trade deficits in unfavorable economic circumstances, East European countries cut domestic growth rates.

Case studies of Hungary and Romania reveal how individual East European countries have adjusted differently to external economic shocks. In the case of Hungary, the following conclusions can be drawn:

- During 1968-73, all major indicators of economic activity improved, in keeping with the objectives of the decentralizing economic reforms of 1968. In the absence of external shocks, it

is likely that this improvement would have continued. Thus Hungary's growing economic difficulties since the early 1970s are mainly attributable to external factors.

- Hungary suffered large terms-of-trade losses in both Western and Eastern markets and large export losses in Western trade as a consequence of the 1973-75 external shocks.
- Hungary's major response to the Western trade deficits occasioned by these shocks was external borrowing. Borrowing needs were aggravated by Hungary's loss of export market share in Western markets. This loss, in turn, was mainly the consequence of internal policy errors that reduced export incentives.
- By 1979, concern about high levels of debt and the associated debt-servicing burden led Hungarian authorities to introduce a domestic austerity program to reduce Hungary's Western trade deficit. This program resulted in a slowdown in economic growth that has persisted to the present and is embodied in the 1981-85 medium-term plan.
- In addition to austerity measures, the Hungarians introduced a whole series of new reforms to improve the country's domestic and foreign economic performance. These reforms have provided closer links between domestic and world prices and stronger incentives for exports and efficiency. They have been most far-reaching in the nonstate sector; agricultural surpluses available for export and encouragement of the "second economy" have improved Hungarian economic performance.
- Soviet willingness to allow Hungary to simultaneously run a growing convertible-currency surplus and a ruble deficit in its bloc trade has permitted Hungary to finance its deficits in Western markets in part by convertible earnings in Eastern ones.
- Hungary's austerity and reform measures, along with this willingness on the part of the Soviets, resulted in a dramatic reduction in Hungary's Western trade deficit, from \$1149 million in 1978 to a surplus of \$461 million in 1982.
- During the next few years, Hungarian economic performance will be shaped by external factors over which the Hungarians have little or no control. Most important will be trends in external capital-market conditions and relative prices. It is anticipated that Hungarian terms of trade with the Soviet Union will deteriorate by nearly one-third between 1980 and 1985.
- At least through the remainder of the 1981-85 plan, growth rates will be depressed, and consumption levels will continue to stagnate; they may even fall somewhat.

- Over the longer run, Hungarian economic growth depends on continuation of economic reform. The recent reaffirmation of reform objectives and, in political terms, Kadar's continued legitimacy are promising signs for the future. At the same time, Kadar's increasing age and possible political dissatisfaction over stagnating consumption levels pose political risks to the reform process.

In the case of Romania, the main conclusions are:

- The 1973-75 external shocks had less adverse effects on Romania than they had on Hungary.
- After an initial increase in its Western trade deficit in 1974, Romania actually reduced this deficit in 1975-77, despite more adverse external circumstances, through increases in exports to Western markets and import substitution.
- Beginning in 1978, Romanian economic performance began to decline. In contrast to Hungary, the roots of Romania's growth slowdown were mainly internal and were traceable to consequences of Romania's rigid central planning system and its development strategy of extensive investment.
- Between 1978 and 1980, Romania ran up a cumulative Western trade deficit of \$3.5 billion, as a result of growing import requirements necessitated by domestic bottlenecks and sharp increases in both the quantity and price of fuel imports.
- Large increases in Romania's foreign borrowing between 1978 and 1980, combined with growing concern among lenders about Romania's ability and willingness to take action to reduce its borrowing needs and general concern about Eastern Europe's creditworthiness, culminated in a cutoff of credit in mid-1981 and a debt rescheduling thereafter.
- Since 1981, primarily in response to credit-market constraints, Romania has followed a program of domestic austerity to reduce its Western trade deficits.
- As a result of this austerity program, Romania's Western trade deficit fell sharply, from \$1.5 billion in 1980 to a surplus of \$1.4 billion in 1982.
- Romania's austerity program, like Hungary's, has produced much lower growth rates, which are likely to persist at least through the 1981-85 plan period. Like Hungary, Romania has placed a disproportionate share of the domestic slowdown on investment, and investment levels have fallen sharply. Declines in Romanian consumption levels have also occurred, and

recurrent reports of shortages on consumer-goods markets suggest that actual declines have probably been greater than those officially reported.

- Unlike Hungary, Romania has not benefited from implicit subsidies in its trade with the Soviet Union, nor has it been allowed to run up persistent ruble deficits in this trade. Apparently, the Soviets do not feel that Romania provides the kind of military and ideological allegiance that warrants the degree of financial support accorded the other East European countries.
- Given reductions in its investment rate and smaller additions to its industrial labor force, Romania is confronting limits on its extensive growth strategy. In the future, Romania's growth prospects will depend on the efficiency of resource use more than they did in the 1970s. In the absence of any indication of meaningful economic reform, and given the unpopularity and domestic self-isolation of the Ceausescu leadership, these prospects remain limited. Without reforms, Romania's adjustment will continue to require enforced austerity at home. Another response may be a turn to the Soviet bloc market to economize on hard-currency imports, but this may require political concessions on Romania's part that are unacceptable to the Ceausescu leadership.

Soviet and American policy actions will have important effects on growth and adjustment prospects in Hungary and Romania over the next several years: Despite its own economic difficulties, the Soviet Union will probably continue to provide some form of economic assistance to Hungary—at the very least to cushion the impact of projected adverse shifts in Hungary's terms of trade with the Soviet Union. In keeping with past trends, Soviet financial assistance to Romania is likely to be much more limited, reflecting Romania's more limited political and military reliability from the Soviet perspective. American policy choices will continue to influence Romanian and Hungarian adjustment prospects in the future. At a general level, macroeconomic policy in the United States will affect the world trade and capital-market conditions on which their adjustment depends. In addition, specific U.S. policy measures targeted at Eastern Europe or at Hungary or Romania individually will be important. Hungarian and Romanian export prospects will continue to be affected by their access to most-favored nation (MFN) treatment in the U.S. market, and their import prospects will continue to be affected by the availability of official U.S. export credits and credit guarantees. American willingness to

reschedule its official credits, in cooperation with the rescheduling of other official Western credits, will continue to be a condition sought for the rescheduling of private credits to both Hungary and Romania. Finally, informal pressure by the United States on private lenders and the International Monetary Fund (IMF) will continue to influence their hard-currency borrowing prospects. The state of U.S.-Soviet relations will also influence adjustment prospects in Hungary and Romania. The worse these relations, the more private lenders will be encouraged to reduce further their exposure throughout Eastern Europe and the greater the likelihood that tighter export controls on East-West trade will limit East European access to needed Western technology. In addition, heightened U.S.-Soviet tension is likely to reduce Soviet tolerance for meaningful economic reform in Eastern Europe.

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CONTENTS

PREFACE	iii
SUMMARY	v
ACKNOWLEDGMENTS	xi
TABLES	xv
Section	
I. A GENERAL FRAMEWORK FOR ANALYZING ECONOMIC ADJUSTMENT PROBLEMS IN EASTERN EUROPE	1
External Disturbances and Their Effects on Economic Performance	1
A Comparative Analysis of Policy Responses to External Shocks	7
A Comparative Analysis of Adjustment Capabilities	25
II. ECONOMIC ADJUSTMENT IN HUNGARY	32
Conditions at the Onset of External Economic Disturbances	32
External Shocks, Adjustment Problems, and Policy Responses: 1974-76	39
External Shocks, Adjustment Problems, and Policy Responses: 1979-81	56
Adjustment Problems and Capabilities: A Forward Look	69
III. ECONOMIC ADJUSTMENT IN ROMANIA	73
Conditions at the Onset of External Economic Disturbances	73
External Shocks, Adjustment Problems, and Policy Responses: 1974-77	77
External Shocks, Adjustment Problems, and Policy Responses: 1978-81	84
Adjustment Problems and Capabilities: A Forward Look	93
IV. CONCLUSIONS	102
Appendix: The Balassa Methodology for Estimating the Effects of External Shocks	117
REFERENCES	121

TABLES

1. Growth of Merchandise Trade	2
2. East European Terms of Trade with the Soviet Union, 1970-81	2
3. East European Total Terms of Trade	3
4. Aggregate Export and Import Quantity Indexes of East European Bloc Trade, 1970-77	3
5. Outstanding Debt of Developing Economies and East European Economies, 1973-81	7
6. Indicators of Economic Growth, by Country Groups	11
7. East European Trade Deficits	18
8. Comparative Investment Rates	22
9. Productivity Indicators in Eastern Europe	26
10. Macroeconomic Indicators of Hungarian Economic Performance, 1971-81	36
11. Terms-of-Trade Effects in Hungary's Trade with Capitalist Countries, 1974-78	41
12. Terms-of-Trade Effects in Hungary's Trade with Bloc Countries, 1974-79	42
13. Export-Demand Effects in Hungary's Trade with Capitalist Countries, 1974-78	45
14. Balance-of-Payments Effects of External Shocks in Hungary: Trade with Capitalist Countries and Policy Responses	49
15. Hungarian Imports from Bloc Countries, 1974-78	51
16. Hungary's Ruble and Nonruble Trade Balance, 1971-81	55
17. The Burden of Hungary's Debt-Service Requirements	60
18. Hungary's Terms of Trade with Western and Bloc Markets	61
19. Romania's Balance of Trade, by Currency and Country Classifications, 1969-82	76
20. Import Growth Rates for Developed Countries, by Commodity Group, 1972-79	79
21. Growth Rates of Exports from Less-Developed Countries, 1963-78	80
22. Export-Demand Effects of Romania's Trade with Capitalist Countries, 1974-77	81
23. Planned and Actual Performance in Romania's Energy Production, 1975-80	87
24. Predicted Values of Romania's Exports and Imports in Western Trade, 1981-85	92
25. The Burden of Romania's Debt-Service Requirements, 1980-81	94

I. A GENERAL FRAMEWORK FOR ANALYZING ECONOMIC ADJUSTMENT PROBLEMS IN EASTERN EUROPE

EXTERNAL DISTURBANCES AND THEIR EFFECTS ON ECONOMIC PERFORMANCE

The East European economies, like those of most other developing countries, confronted major external disturbances during the 1970s in international markets for traded goods and in international capital markets. Disturbances in trade were triggered by the oil price rises of 1973-74 and 1979-80, which resulted in major deteriorations in world terms of trade between manufactured goods and raw materials (Sachs, 1982b). These price shifts touched off slowdowns in world trade in 1974-75 and again in 1979-81, largely because of recessionary conditions in the advanced industrial economies whose markets had been the source of dynamism in world trade in the 1960s. The marked deceleration in world trade in the 1970s and its persistence into the 1980s, shown in Table 1, was also reflected in a slowdown in the growth of world markets for East European exports. The influence of external disturbances in international trade on the economies of Eastern Europe can thus be decomposed into a terms-of-trade effect and an export-demand effect.

The terms-of-trade effect began in non-CMEA trade¹ and gradually influenced conditions in CMEA, or bloc, trade as well. After 1975, the rules for price formation in bloc trade were adjusted to follow a five-year moving average of world prices, so that with a lag, the deterioration in world terms of trade for net energy and raw-materials importers produced a corresponding deterioration in bloc terms of trade. As Table 2 indicates, the major beneficiary of this adjustment was the Soviet Union, a net exporter of energy and raw materials in the bloc. The major victims were the resource-poor and energy-poor economies of Hungary, the German Democratic Republic (GDR), Czechoslovakia, and Bulgaria. Overall, adverse movements in relative prices on both bloc and world markets produced large deteriorations in the terms of trade for most of the East European economies during the 1970s, as shown in Table 3.

¹Trade among countries outside the Council for Mutual Economic Assistance. In this report, the terms *bloc* and *nonbloc* will be used to refer to CMEA and non-CMEA trade.

ECONOMIC ADJUSTMENT IN EASTERN EUROPE

Table 1
GROWTH OF MERCHANDISE TRADE
(Average annual percent growth rate)

Economy	Exports				Imports			
	1960-70	1970-79	1980	1981	1960-70	1970-79	1980	1981
Low-income countries	5.0 ^a	-1.0	NA	NA	5.2	3.3	NA	NA
Middle-income countries	5.4	4.3	NA	NA	6.6	5.0	NA	NA
Oil importers	6.3	4.4	NA	NA	7.7	3.7	NA	NA
Oil exporters	4.5	1.7	NA	NA	3.6	11.1	NA	NA
Industrial market economies	8.4	5.9	3.8	1.5	9.3	4.5	-0.7	-2.3
Industrial nonmarket economies ^b	9.0	7.5	NA	NA	7.9	7.6	NA	NA
World	7.6	6.4	2.3	1.5	8.1	5.7	0.8	0.0

SOURCES: 1960-70 and 1970-79 data from IBRD, *World Development Report*, 1981 (Table 8, Appendix); 1980-81 values calculated from data in United Nations, *Monthly Bulletin of Statistics*, April 1982.

^aMedian values for country group.

^bExcluding Romania, for which quantity indexes of exports and imports are not available.

Table 2
EAST EUROPEAN TERMS OF TRADE WITH THE SOVIET UNION, 1970-81
(1970 = 100)

Country	1973	1974	1975	1976	1977	1980	1981
Bulgaria	—	—	90	—	80	76	71
Czechoslovakia	—	—	86	—	81	77	71
East Germany	—	—	85	—	78	74	69
Hungary	—	—	81	—	72	68	64
Poland	—	—	95	—	87	83	78
Romania	—	—	103	—	91	86	85
All Eastern Europe	98	95	88	85	81	77	72

SOURCES: 1973-75 data for All Eastern Europe from Vanous (1981, Table 11). Remaining data from Wharton Econometric Forecasting Associates (WEFA), *Centrally Planned Economies, Current Analysis*, May 10, 1982.

Table 3
EAST EUROPEAN TOTAL TERMS OF TRADE
(Bloc and nonbloc; 1975 = 100)

Country*	1970	1971	1972	1973	1974	1976	1977	1978
Bulgaria	104	102	104	103	102	95	91	87
Czechoslovakia	111	110	107	106	111	97	95	93
GDR	115	115	114	109	104	101	99	98
Hungary	120	119	118	116	108	102	99	98
Poland	98	102	104	102	100	101	100	100

SOURCE: United Nations, *Yearbook of International Trade Statistics*, 1979.

*Romania is not included because data are not available.

Changes in world trade conditions also influenced the growth prospects for bloc trade during the 1970s. Demand growth slowdowns in response to balance-of-payments difficulties throughout Eastern Europe in 1975-76 produced slowdowns in intrabloc export markets. Efforts to economize on imports caused a decline in the income elasticity of import demand throughout the bloc. Table 4 indicates the effects of these developments in the quantity indexes for bloc trade.

Changing world market conditions also tended to limit bloc trade prospects on the supply side. The increased attractiveness of energy

Table 4
AGGREGATE EXPORT AND IMPORT QUANTITY INDEXES
OF EAST EUROPEAN BLOC TRADE, 1970-77
(1970 = 100)

Year	Intra-East Europe		East Europe/USSR	
	Export	Import	Export	Import
1970	100.0	100.0	100.0	100.0
1971	110.7	110.7	110.3	106.2
1972	123.4	123.4	129.3	108.7
1973	142.4	142.3	134.6	117.6
1974	159.0	159.0	141.0	128.6
1975	160.4	160.4	146.0	130.5
1976	169.7	169.7	146.8	129.3
1977	183.0	183.0	164.1	143.0

SOURCE: Vanous (1981, Table 13).

and raw-materials sales on world markets, stemming from world price shifts, encouraged a diversion of these "hard" exports to nonbloc markets, resulting in a supply constraint on intrabloc trade flows of fuels and nonfood raw materials (Vanous, 1978, 1981). Since bloc trade functions according to the principle of bilateral balance—both between countries and between types of goods—supply constraints on fuel and raw-materials trade limited growth prospects for all intrabloc trade. These supply constraints were another example of the effects of world trade conditions on the prospects of individual East European countries.

Supply limitations on bloc trade in fuels and raw materials were the result not only of the diversion of such trade to world markets, but also of a longer-term Soviet strategy to reduce East European dependence on Soviet exports of such products. This strategy reflected the persistent tightening of fuel and raw material supplies within the Soviet Union during 1960–75, when the annual growth rate of Soviet output of these items declined from about 9.5 percent to about 4.8 percent; in contrast, the annual growth rate of overall Soviet industrial production declined only slightly, from about 8.9 percent to about 7.0 percent (Vanous, 1978b, p. 17). By the mid-1970s, a much larger fraction of the Soviet output of domestic fuels and raw materials was required for domestic needs, leaving much less available for export to either bloc or nonbloc markets. Because nonbloc exports of fuels and raw materials are an important source of convertible currency, the Soviet decision to divert a larger share of these commodities to nonbloc markets is understandable. But for the East European economies, this decision was another external shock stemming from changes in intrabloc trade conditions that were influenced by, but independent of, changes in world trade conditions.

The first major change in world capital-market conditions occurred in 1974–77 in the wake of the oil price shock of 1973–74. Previously, most of the external financing available to the developing economies and the Eastern bloc had come from the savings of the industrial market economies. After 1973–74, oil exporters began to provide substantial savings to be recycled through international capital markets for both developed and developing economies.

The fourfold increase in the price of oil in 1973–74 caused a massive transfer of real income to oil exporters. At least initially, their expenditures did not keep pace with their real income gains, and their savings rose dramatically: Their current-account surplus increased from \$4.1 billion in 1973 to \$62.6 billion in 1974 (IBRD, 1981, p. 53). This dramatic growth increased the supply of loanable funds on international capital markets and reduced the real rate of interest attached to

such loans. Indeed, the rate became negative by the end of 1974 and remained negative through 1978.² This change in world capital-market conditions enhanced the attractiveness of external borrowing as a way to finance continued growth, despite adverse shifts in the terms of trade and temporarily reduced export prospects.

Most of the newly industrializing countries (NICs) and most of the East European countries took advantage of improved credit-market conditions by building up their international indebtedness. Between 1973 and 1978, for example, the gross medium- and long-term debt of the developing countries (including both oil importers and oil exporters) increased by 280 percent, with debt from private creditors (mainly commercial bank debt) increasing nearly fourfold.³ Debt accumulation was most rapid for the NICs, whose developmental and investment opportunities made them especially attractive to private lenders. As a consequence, private credits to developing countries were concentrated almost totally in these countries, with the largest borrowers—Mexico, Venezuela, Algeria, Brazil, Spain, Argentina, Yugoslavia, and South Korea—together accounting for over \$60 billion of total bank debts outstanding in 1979 (IBRD, 1981, p. 52).

Like the NICs, the East European economies also took advantage of improved credit-market conditions. Between 1973 and 1978, the total (including short-term) gross hard-currency debt of Eastern Europe increased 480 percent.⁴ The bulk of this increase was attributable to increases in commercial debt, which accounted for an average of 93 percent of total gross debt.⁵

Most of the increase in commercial borrowing by both the NICs and the East European economies was in the form of syndicated bank loans with floating interest rates. The system of floating rates—expressed as a margin above the LIBOR—enabled the banks to offer longer maturities without exposing themselves to the risks of changes in short-term rates of interest. Between 1974 and the end of 1978, the LIBOR declined and fell below the rate of inflation in the major industrial economies. In 1978, however, world credit markets tightened, partly because of a sharp decline in OPEC savings, an expansion in some of the industrial market economies, and increasing concern over the

²The real rate of interest is estimated as the difference between the six-month London Interbank Offered Rate (LIBOR) and the rate of inflation in the advanced industrial economies. See International Bank for Reconstruction and Development (IBRD), *World Development Report 1981*, p. 52, for a discussion of interest rates on international credit markets.

³Calculated from debt figures provided in Sachs (1982a), Table 3, p. 11.

⁴Calculated from data provided by Lawrence Brainard.

⁵Calculated from data in Zoeter (1981), p. 729.

creditworthiness of several debtor countries. As a consequence, the LIBOR began to rise and by 1979 had attained levels above the rate of inflation in the major industrial economies, thus ending easy credit terms in world capital markets. Despite another large oil price increase in 1979-80, the LIBOR has remained positive in real terms.

Changing world credit conditions in 1979 and thereafter adversely affected not only the interest burden of outstanding debt but also the composition and availability of new debt. Until 1978, commercial bank loans were largely untied and gave the NICs and East European borrowers flexibility for balance-of-payments purposes. After 1978, the growth portion of commercial bank loans consisted of export credits whose use was limited to specific projects. In addition, commercial lenders reduced the maturity structure of their loans, forcing country borrowers to adjust their borrowing to short-term loans, with attendant limitations on their usefulness and increases in their liquidity risk. Net lending flows to the NICs and East European economies declined as the growth of new loans failed to keep pace with the repayment of old ones. All of these changes in the international credit market influenced the policy options available to borrowing countries and became channels through which external disturbances affected them.

These disturbances in credit-market conditions were further intensified in the East European economies by the deterioration in East-West economic and political relations following the crisis in Afghanistan. Most banks reacted to this crisis by reevaluating their position in Eastern Europe and taking a defensive posture.⁶ This was intensified by repayment difficulties in Poland that reverberated throughout the bloc. The credit conditions confronting East European borrowers tightened even more than the overall credit-market conditions after 1978. Although these developments were internal to the bloc, they were external to individual East European countries, except for Poland.

Table 5 indicates the effects of tightening credit-market conditions on the rate of growth of debt in the developing economies and the East European economies since 1978. Because debt amortization and interest payments continued to grow rapidly during this period, the rate of growth of credit flows net of debt servicing declined even more than the rate of growth of debt.

⁶Eichler (1981), himself an international banker, makes the point.

Table 5
OUTSTANDING DEBT OF DEVELOPING ECONOMIES AND
EAST EUROPEAN ECONOMIES, 1973-81
(Billions of current dollars)

Economy	Level				Average Annual Growth Rate (%)	
	1973	1975	1978	1981*	1973/78	1981/78
Developing countries:						
Gross medium-term and long-term debt (outstanding and disbursed)	111.3	166.5	309.7	490.0	22.7	16.5
Debt-service payments	15.4	23.6	49.0	98.2	26.1	26.0
Eastern Europe:						
Net hard-currency debt (outstanding and disbursed, including short-term)	8.0	19.0	42.3	58.3	39.5	11.3

SOURCES: Developing countries: 1973-78 from Sachs (1982a); 1981 from IBRD, *World Development Report*, 1982 (Table 2.8). Eastern Europe: 1973-78 from CIA (1980); 1981 from WEFA estimates.

*Preliminary.

A COMPARATIVE ANALYSIS OF POLICY RESPONSES TO EXTERNAL SHOCKS

Most of the economies of the developing and developed world, as well as those of Eastern Europe, were confronted with the international economic disturbances discussed above. Yet there was considerable cross-country variation in economic performance, attributable to such factors as differences in sensitivity and policy responses to the external disturbances. In many important respects, policy responses in Eastern Europe were similar to those pursued throughout the developing world. The factors underlying deteriorating economic performance in Eastern Europe must be analyzed from a broad comparative perspective rather than one emphasizing the uniqueness of the East European systems, to show the many parallels between the performance of the developing economies and that of the East European economies during the 1970s.

Macroeconomic policy responses to the disturbances of the 1970s can be analyzed within the framework of the absorption approach.⁷ This approach can be applied to both market and nonmarket planned economies, regardless of development level. It captures the links between trade flows and domestic macroeconomic variables in terms of the relation between domestic output and domestic internal demand or absorption.

The following notation is used in this discussion:

Q	=	domestic output available for final use (net of domestic intermediates)
A	=	domestic absorption
X	=	exports
M	=	imports
P	=	price of imports
B	=	trade surplus ($X - PM$) ⁸
C	=	consumption
G	=	government expenditure
I	=	investment expenditure
SD	=	domestic savings
YR	=	real income

All of these variables except M are expressed in units of the domestic good. The basic relations of the absorption model are

$$A = C + I + G , \quad (1)$$

i.e., domestic absorption, broken down into component expenditures, and

$$A = Q + PM - X , \quad (2)$$

the aggregate sources of output available for domestic absorption. Rewriting Eq. (2) gives

⁷This approach has also been utilized by Portes (1980), Neuberger, Portes, and Tyson (1981), and Tyson (1981), in earlier studies of the effect of the external disturbances of the 1970s on Eastern Europe.

⁸Both merchandise trade and trade in nonfactor services (tourism, shipping, etc.) are included in the calculation of the trade surplus. Factor payments (such as worker remittances and interest payments) are excluded.

$$Q - A = X - PM , \quad (3)$$

and combining Eqs. (1) and (3) gives

$$Q - (C + I + G) = X - PM = B , \quad (4)$$

$$SD = Q - (C + G) , \quad (5)$$

$$SD - I = X - PM = B , \quad (6)$$

$$PM = mQ , \quad (7)$$

where m is the import elasticity of domestic output, and

$$YR = Q - PM . \quad (8)$$

Resources available for domestic use are given by domestic output plus imports minus exports in Eq. (2). Domestic use is divided into one of three mutually exclusive and exhaustive categories: consumption, investment in fixed and working assets, and government expenditure. This breakdown is given in Eq. (1). Combining Eqs. (1) and (2) and rewriting yields Eq. (4), the fundamental relationship of the absorption model, which indicates that any excess of domestic output over domestic absorption is available for net exports, and any excess of domestic use over domestic production must be supplied by net imports. Ex post, this relationship is an accounting identity. Ex ante, it is an equilibrium condition, reflecting the consistency of objectives between the decisionmakers of the domestic economy and those of the rest of the world.

Any trade deficit, whether planned or unplanned, must be financed unless and until there is some adjustment in either Q or A or both to eliminate it. The absorption model is intricately related to an understanding of how and why countries borrow from external sources and vary their levels of international indebtedness over time. The relationship between the borrowing decision and the absorption model is even clearer if gross domestic saving is defined as the excess of domestic resources over private and public consumption expenditures, as in Eq. (5). With this definition, Eq. (4) may be written as Eq. (6), which indicates that the trade deficit or the amount of foreign borrowing just

equals the excess of gross domestic investment expenditure over gross domestic saving. Again, this relationship can be understood as either an *ex ante*, planned equilibrium condition—the excess of desired domestic investment over desired domestic saving equals the desired trade deficit—or an *ex post*, accounting relationship. As an *ex ante* condition, it reflects a country's decision about the optimal level of foreign borrowing. Such a decision presumably depends on a comparison of the expected returns to foreign borrowing—either returns to the investment it finances or returns to the intertemporal smoothing of consumption it allows—and the expected costs.

The absorption model can illustrate the impact of the terms-of-trade and export-demand disturbances of the 1970s. The analysis of the export-demand effects is straightforward. For most developing economies and the economies of Eastern Europe, the slowdown in world trade resulted in a decline in export demand and a resulting drop in X^9 . In these economies, where supply rather than demand constraints determined the level of output, the drop in foreign demand tended to be offset by an increase in domestic absorption, leaving domestic output unchanged. Because imports consisted mainly of goods required for domestic production, they also tended to remain constant, and the result was an increase in the trade deficit and foreign borrowing.

The export-demand effects of external disturbances were somewhat different in the industrial market economies. For one thing, export demand did not decline as sharply, because the oil-exporting nations increased demand for the output of these economies. In addition, the decline in export demand tended to set off an automatic contraction in domestic output through the usual demand-multiplier effects. The result was a decline or slowdown in the growth of domestic output, which in turn reduced import demand, thereby reducing the trade deficit.

The export-demand and terms-of-trade effects of external disturbances in the 1970s on the trade deficit and borrowing posture of a particular economy depended on how that economy responded. One adjustment response that limited large increases in the trade deficit and in borrowing needs was a decline in domestic output or a slowdown in its rate of growth. This response developed automatically in the advanced industrial economies and was bolstered by active policy mea-

⁹Of course, one response to the decline in export demand was a drop in export prices (or a devaluation). This response is equivalent to a terms-of-trade deterioration because it amounts to an increase in the price of imports measured in units of domestic good. The effects of such a deterioration on the trade deficit and borrowing needs are discussed below.

sures to reduce aggregate demand. Whether as a result of policy weaknesses in the control of aggregate demand or a policy decision to protect domestic output growth from the contractionary effects of external disturbances, the growth-slowdown adjustment response was less immediate and weaker in the developing economies and in Eastern Europe than in the industrial economies. This difference in response patterns is apparent in Table 6. Growth rates in the developing countries and in Eastern Europe declined after the 1973-74 disturbances, but not as precipitously as in the developed countries.

Within the absorption-model framework, the terms-of-trade effects are represented by an increase in P , the price of imports, in terms of domestic output. At unchanged levels of exports, imports, and domestic output, a terms-of-trade deterioration causes an increase in the trade deficit, as absorption (measured in units of domestic output) increases. The resulting increase in the trade deficit represents the so-called "impact" effect of the terms-of-trade shift. Whether the

Table 6
INDICATORS OF ECONOMIC GROWTH, BY COUNTRY GROUPS

a. Developed and Developing Economies

Economy	1973-80/ 1960-73					
	1960-73	1973-80	1980	1981	1982	1960-73
All developing countries*	5.8	4.6	4.0	2.2	3.9	0.85
Low-income countries	3.6	3.5	6.0	5.1	4.2	0.97
Middle-income countries	6.4	4.7	3.5	1.7	3.8	0.73
High-income oil exporters*	7.0	11.4	4.5	-11.0	-1.0	1.63
Industrial market economies*	5.1	2.4	1.4	1.2	0.2	0.47

b. Eastern Europe

Economy	1974-79/ 1965-75			
	1965-75	1974-76	1974-79	1965-75
Eastern Europe average ^b	7.3	5.5	5.9	0.81
Eastern Europe excluding Romania ^b	5.8	6.0	5.2	0.90

SOURCES: Part a: IBRD, *World Development Report*, 1982 (Table 2.1). Part b: Calculated from data on net material product growth rates in various issues of United Nations Economic Commission for Europe, *Annual Survey of Europe*.

*Average annual rate of growth of GDP.

^bAverage annual rate of growth of net material product; simple average of growth rates for the industrial economies of Eastern Europe.

actual effect equals the "impact" effect depends on what happens to output, imports, and absorption in response to automatic and policy reactions triggered by changing macroeconomic and microeconomic conditions.

In market economies, several automatic adjustments are possible. First, as imports become more expensive, demand for them may fall as buyers economize on their use or switch to cheaper domestic substitutes. This price effect on the level of imports is usually discounted in discussions of the short-run effects of the terms-of-trade changes in 1973-74 and 1979-80, because the imports in question were raw materials, oil, and other products for which there were no easily available domestic substitutes, particularly in foreign-exchange-constrained developing countries and in Eastern Europe. In the longer run, changing patterns of investment, production, and energy conservation to economize on import requirements were important microeconomic responses to the price effect, and differences among countries in their ability to promote the necessary responses underlay differences in their economic performance under new international circumstances.¹⁰

In the short run—in this discussion, periods of one to two years—it is probably realistic to treat the price elasticity of import demand in the developing and East European economies as insignificantly different from zero; thus there is no short-run price effect. It is probably reasonable to further assume that the level of their imports is dictated by the level of domestic output. As Eq. (7) indicates, as long as domestic output and exports remain unchanged, the "impact" effect of the terms-of-trade deterioration on the trade deficit is given by $dB = -d(PM)$. The larger a country's level of imports and the greater the deterioration in its terms of trade, the larger is the "impact" effect on its trade deficit.¹¹

Even in the absence of a price effect, the terms-of-trade deterioration is likely to affect the demand for imports in market economies, as a result of automatic demand- and supply-side adjustments.¹² On the demand side, the deterioration reduces domestic real income, measured as the difference between domestic real output and payments for imports (Eq. (8)). Clearly, the extent of the real income loss depends

¹⁰These microeconomic adjustment responses to changing international conditions will be discussed further below. For now we limit our analysis to the macroeconomic effects of the terms-of-trade deterioration and macroeconomic responses to them.

¹¹This conclusion suggests that, other things equal, the sensitivity of a particular economy to the terms-of-trade disturbances of the 1970s depended on the initial level and composition of its imports.

¹²For an insightful and detailed analysis of these effects in market economies, see Bruno and Sachs (1979, 1982).

on the size of the deterioration. Real domestic income falls because the terms-of-trade shift is equivalent to an excise tax that must be paid to the rest of the world. The tax reduces the real resources available for domestic use, and real income falls. This is true for all economies in which the terms of trade deteriorate, regardless of systemic or developmental differences. Economies differ, however, in how the fall in real income affects the behavior of economic agents.

In market economies, where output tends to be demand-constrained and consumption (the largest single component of demand) depends on income, the real income drop is likely to cause falls in domestic demand and domestic production. At unchanged levels of I and G , with $C = C(YR)$, or with consumption a function of real income, the terms-of-trade shift reduces aggregate demand automatically. The result is a multiplier contraction of domestic output, which reduces the demand for imports. The increase in the trade deficit is less than the one produced by the "impact" effect (which assumes that domestic output remains unchanged).¹³

On the supply side, the terms-of-trade deterioration also leads to automatic adjustments in market economies. In this area, systemic differences among market economies are particularly important to an analysis of differences in economic performance. Given the nature of the terms-of-trade shifts that occurred in the 1970s, the resulting relative price changes appeared as what macroeconomists call a supply shock—an increase in the prices of (imported) intermediate inputs that cut into the profitability of production and induced producers to cut back on their output levels and raise their selling prices.¹⁴ Thus, the supply shock in market economies tended to generate both higher prices and lower domestic output—stagflation. The extent of the domestic-output contraction was influenced by the behavior of real wages after the supply shock, and this in turn was influenced by labor market institutions. At unchanged real wages, the supply shock led producers to trim back their labor demand, which in turn necessitated a fall in real wages if employment levels were to remain unchanged. In essence, the supply shock required a decline in real wages to maintain full employment. In the absence of such a decline, it required a drop in

¹³With the equations of the absorption model, the contractionary effects of the terms-of-trade shift reduce import demand to the point where the resulting change in the trade deficit following the shift is given by $dB = dYR - C(dYR)$. As long as $C' < 1$, $dB < 0$ for $d(YR) < 0$, indicating that despite the demand contraction, the net effect of the terms-of-trade deterioration is an increase in the trade deficit.

¹⁴The following discussion of the impact of supply shocks on output and prices in market economies draws heavily on the works of Bruno and Sachs (1979, 1982) and Sachs (1979, 1982b). A complete description of the model on which the findings in this report are based is available in these sources.

employment levels or an increase in the unemployment rate. Whether or not the adjustment in real wages occurred depended on the institutional characteristics of the country. In most developed market economies, including Japan and Western Europe, real wage growth declined after the first supply shock, but not sufficiently, and unemployment increased.¹⁵ After the second supply shock, real wages showed more flexibility in Japan, and employment levels were maintained at least temporarily; but elsewhere in the industrial market economies, unemployment tended to increase once again. The result of real wage rigidity following the two supply shocks was a greater output contraction than would have occurred had real wages fallen to their market-clearing levels.

In the short run, the interaction of the demand and supply effects of the terms-of-trade deterioration in the industrial market economies led to a decline in output or a slowdown in its rate of growth, an increase in unemployment, and an acceleration in the inflation rate. At different times and to differing extents in individual countries, these effects were aggravated by macroeconomic policies to restrict aggregate demand. These policies, motivated by a desire to limit the inflationary effects of the supply shock, enhanced their automatic contractionary effects. The resulting slowdowns in real output tended to reduce import demand and hence to reduce the deterioration in the trade balance caused by the terms-of-trade shift. So sharp were these reductions that one year after the 1973-74 shift, the advanced industrial economies registered large trade and current-account surpluses, although their terms-of-trade deterioration in 1973-74 had been substantial. A similarly rapid adjustment followed the 1979-80 shift. By 1981, the advanced industrial economies ran a combined current-account surplus, after a temporarily large increase in their trade and current-account deficits in 1980, largely attributable to the terms-of-trade deterioration in that year.

Theoretically, according to the analytical framework of the absorption model, the automatic demand and supply effects of the terms-of-trade shifts of the 1970s should have come into play in the market economies of the oil-importing developing countries. As the extensive empirical work of Balassa (1981a, 1981b) and the IBRD (1981, 1982) indicates, however, these effects did not combine to produce the kind of sharp contraction in output or output growth rates observed in the industrial market economies. Growth rates in the developing countries and the NICs declined after 1973-74, but not as precipitously as in the

¹⁵The average unemployment rate in the Organization for Economic Cooperation and Development (OECD) countries climbed from 3.1 percent during 1967-74 to 5.3 percent in 1974-80.

developed world (see Table 6). As a consequence, the trade-balance effects of the terms-of-trade deterioration died out more slowly. In response, trade and current-account deficits rose sharply in 1974 and 1975 and only began to decline in 1976, as the effects of various adjustment policies, including a gradual slowdown in domestic growth, were felt. Additional foreign borrowing was required to cover the large deficits of 1974 and 1975, and the indebtedness of the NIC and developing country economies climbed sharply. A similar lagged response followed the 1979-80 oil price increase in the oil-importing developing countries. As a result, their trade deficits climbed sharply in 1979 and 1980 and remained high through 1981. Once again, the increased deficits required further increases in foreign borrowing.

This time, however, borrowing needs stemming from the 1979-80 terms-of-trade deterioration and the world slowdown in trade that followed were enlarged by repayment obligations of the outstanding debt. Rising interest charges on this debt increased debt-servicing levels sharply. Between 1978 and 1981, the interest payments of developing countries rose threefold and increased from less than one-third to almost one-half of debt service (IBRD, 1982). Thus, capital-market disturbances had an independent effect on the borrowing requirements of the developing countries and correspondingly reduced the scope of borrowing available to finance trade deficits. Under the new capital-market conditions, the option of delaying adjustment to changed international trade conditions by additional borrowing was no longer feasible for many developing countries. Instead, active policy measures were required to generate trade surpluses to honor outstanding repayment obligations.

In many important respects, the responses of East European economies to the disturbances of the 1970s were similar to those of developing economies. Because of the institutional features of the East European economies, the automatic contractionary effects that occurred in the developed market economies did not come into play in Eastern Europe. The result was a pattern of delayed adjustment to changed international trade conditions, accompanied by growing deficits and increased foreign borrowing. As already noted, this pattern was characteristic of most developing countries as well.

To understand this delayed adjustment pattern, it is useful to examine the institutional peculiarities of the East European economies. On the demand side, declines in export demand stemming from world market conditions did not influence the level of domestic output, because supply availabilities rather than demand conditions determined output levels. There was no dearth of domestic demand to absorb the output made available as a result of an exogenous decline in foreign

demand. Furthermore, declines in real income stemming from terms-of-trade deterioration did not exercise an automatic damping influence on aggregate domestic absorption. Because domestic prices and foreign prices were separated by an elaborate tax-subsidy scheme, domestic users of energy and raw materials did not pay higher prices for these products after world prices increased. Thus the decline in real income that accompanied these increases at the national level did not produce a decline in the real incomes or real purchasing power of domestic agents; there was no automatic "tax effect" of terms-of-trade shifts on domestic incomes, employment, or output. It was up to the planners and political leaders to determine how a nation's real income loss would translate into changes in the composition and intertemporal allocation of domestic consumption.

On the supply side, the terms-of-trade shift produced no contractionary effects in the East European planned economies. In market economies, the reduced profitability of domestic production following oil and raw-materials price increases automatically sparked supply-side contractions, because supply decisions were motivated by profitability considerations. But in Eastern Europe, planners and enterprises determined production and employment decisions in response to plan directives and incentive schemes for keeping output growth as rapid as possible. Changing world circumstances did not automatically affect the underlying pressures for maximizing output and employment in these economies. At a macro level, the insulation of domestic supply-side incentives prevented the aggregate losses in output and employment that occurred in the market economies. Unfortunately, at a micro level, this insulation made the changes in the composition of production and absorption necessitated by world trade disturbances more difficult.

In East European economies, adjustment responses to the demand and supply effects of international trade disturbances occurred only gradually, as a result of policy changes. The trade-deficit problems were more immediate and acute than in the advanced industrial market economies because there was no automatic decline in domestic output and hence no induced fall in imports. At a macro level, the planners had to decide how to adjust the various components of absorption to produce a sustainable path of trade deficits and borrowing under new international conditions.

Initially, the planners' response to changed international conditions was passive. No active policy measures were introduced to curtail the rate of growth of output or absorption or to alter the composition of

absorption between investment and consumption. This passive response can be interpreted either as a conscious act of policy or as a consequence of the planners' inability to agree on and enforce active adjustment policies in a timely manner. The correct interpretation varies from country to country.

In Eastern Europe, if the planners thought that the decline in real income occasioned by the 1973-75 terms-of-trade losses was temporary, a decision to borrow temporarily to smooth the growth of domestic absorption over time would have been rational, provided the expected returns were at least as great as the cost of borrowing. Because it is both economically and politically costly to alter investment and consumption growth paths in planned economies in short periods of time, the expected returns from temporary borrowing were probably high. At the same time, external capital market conditions made the cost of such borrowing low. Even if the planners thought that the real income loss was permanent, a passive response of additional borrowing would have been rational if it had financed investment projects whose expected returns exceeded borrowing costs. Such projects would have made available additional net resources to offset the real income loss. No decline in consumption would have been required as a result. The only effect of the real income loss on consumption would have been a decline in its growth rate relative to what it would have been otherwise with the same investment effort.

Regardless of whether or not the passive response was a conscious, rational choice, it had predictable effects on trade deficits and borrowing needs, both of which increased sharply in 1974 and 1975. By 1976, however, the planners in several East European countries began to respond to the worsening of international trade conditions and growing trade deficits. One measure was a slowdown in output growth rates to reduce import requirements. The growth slowdown is apparent in Table 6. Like the middle-income developing countries with which they can reasonably be compared, East European countries reduced their growth rates noticeably during 1974-79.

In contrast to the experiences of the developing economies, however, growth slowdowns in the East European economies were not accompanied by dramatic reductions in trade deficits. In response to successful adjustment policies, the combined deficits of the oil-importing developing countries declined by nearly 29 percent in 1976 and another 13 percent in 1977 before leveling off in 1978, prior to the second wave of international-trade and capital-market disturbances. But the combined deficits of Eastern Europe remained largely unchanged at record levels between 1975 and 1977, climbed by about 15 percent in 1978, and only began to decline significantly in 1979. As Table 7 indicates,

East European deficits with the developed nonbloc countries and those with the Soviet Union moved somewhat differently. Trade deficits with the developed countries declined by about 4 percent in 1977, in response to the 1976 growth slowdown that occurred in some of the East European countries; but deficits with the Soviet Union continued to rise steadily between 1975 and 1978 and only began to decline in 1979.¹⁶ Moreover, the trade deficit problems are probably understated in Table 7 because Soviet price subsidies on exports to Eastern Europe during 1975-79 reduced the deficits relative to what they would have been at market prices.¹⁷

Table 7
EAST EUROPEAN TRADE DEFICITS
(Millions of dollars)

Year	Total		With Developed Countries		With USSR	
	A	B	A	B	A	B
1972	—	NA	—	—	—	—
1973	1133	NA	2464	NA	-996	NA
1974	5275	NA	5160	NA	-211	NA
1975	6045	6043	6405	6019	726	871
1976	6127	6014	6346	(6578)	6342	1005
1977	6141	6137	6074	(6225)	5637	1680
1978	7070	6237	6572	(6472)	5714	1759
1979	5723	4504	5556	(5380)	5161	1433
1980	NA	NA	3626	(3449)	NA	2237
1981	NA	NA	NA	(3300)	NA	NA

SOURCES: Data for 1974-80 from CIA *Handbook of Economic Statistics*, 1981; data for 1973-74 from Vanous (1981). Numbers in parentheses are Wharton estimates (WEFA, CPE Service, *Current Analysis*, January 8, 1982).

NOTE: A - All Eastern Europe; B - Eastern Europe excluding Romania.

¹⁶Because Romania was a net exporter of oil products until the end of the 1970s, it is useful to examine the pattern of East European trade deficits excluding Romania, to get another comparison of East European performance with that of the oil-importing developing countries. These data are also included in Table 7. The general conclusions about the behavior of East European deficits over the 1975-79 period do not change. Deficits remain high throughout the 1975-78 period and only begin to decline sharply in 1979.

¹⁷For a discussion of these subsidies, see Hewett (1980).

Because it failed to curb trade deficits and restore external equilibrium during 1975-78, Eastern Europe entered the second period of international trade and capital-market disturbances in an extremely vulnerable position. Given its record deficits, a passive adjustment response was not feasible. Foreign borrowing requirements were already substantial, and changing capital-market conditions limited the availability and increased the price of additional borrowing. In addition, increasing debt-servicing requirements—because of both the maturity structure of outstanding debt and rising interest rates beginning in 1978—meant that a larger portion of foreign borrowing was required simply to finance existing debt, with a correspondingly smaller portion available to finance trade deficits. As a result, Eastern Europe had to reduce its trade deficits precisely when world trade disturbances made this extremely difficult and world capital-market disturbances made it increasingly necessary. By the end of the 1970s, Eastern Europe did not have the option of delaying its adjustment to world trade disturbances, as it had after 1973-75 or as the developing countries had after both disturbances. In the short run, the only policy available to reduce trade deficits was a slowdown in domestic growth rates to reduce import demand. This policy produced a sharp decline in growth rates in most of the countries of Eastern Europe beginning in 1979.¹⁸

To understand why Eastern Europe failed to adjust adequately to changed international conditions between 1975 and 1978, it is necessary to examine adjustment policy options in greater detail. So far the analysis has identified two such options: a passive response, in which domestic policies do not react to external disturbances and additional foreign borrowing finances increased trade deficits; and an active macroeconomic stabilization response, in which domestic growth rates are slowed to reduce import demand and the trade deficit. The passive response amounts to postponing active adjustment policies until the repayment of foreign debt requires trade surpluses to produce the necessary foreign exchange.

The absorption model suggests another adjustment response. At a macro level, the trade deficit represents the excess of domestic absorption over domestic output. Therefore, policies that reduce domestic absorption or its rate of growth will, other things equal, reduce the trade deficit and represent another policy option. Theoretically, the

¹⁸In some East European countries, particularly Poland, the slowdown in 1979 and thereafter can be interpreted as the result not of a conscious policy decision by planners, but of a binding foreign-exchange constraint on the level of imports. Most imports are required inputs to production, so the constraint on imports acted as a constraint on output in the usual bottleneck-multiplier manner.

planned systems of Eastern Europe are ideally suited to these kinds of absorption-reducing policies, since the planners exercise direct control over the rate of growth or levels of domestic expenditures. Suppose, for example, that the planners wish to slow the rate of growth of consumption to free domestic resources for export. This can be achieved by a reduction in the rate of growth of money wages, which the planners theoretically control. Alternatively, the planners might decide to cut investment or its rate of growth. Theoretically, their direct control over enterprise investment expenditures through both the state-controlled credit system and plan controls over material and capital-goods allocations should allow them to achieve the desired reductions.

In practice, however, the experience of the 1970s suggests that the planners faced more difficulties controlling the level and composition of domestic absorption than theoretical models of planned economies would suggest. There are at least two reasons for this: political constraints on the use of available policy instruments, and systemic weaknesses in the instruments themselves. Political constraints were especially important in limiting the planners' willingness to exercise control over consumption. What legitimacy the East European regimes have is based largely on economic performance. The populations have come to expect steadily rising standards of living and consumption. As a result, there are fairly inflexible "social norms" (Kornai, 1981) for wage growth and consumption growth. The planners are reluctant to disturb these norms because they fear possible disruption of the legitimacy of the political system. Thus, after the disturbances of 1973-75, both money and real incomes were reduced only gradually and in most cases temporarily. It was not until 1978-79 that the mounting balance-of-payments and borrowing pressures forced the planners to undertake the politically delicate task of reducing money and real income growth as a way to reduce the growth of domestic absorption.

The systemic weaknesses of the investment-control mechanism in the planned economies also caused problems. Decisionmakers in these economies are motivated by a strong internal expansion drive on every level. Investment demand is permanent and constantly pressing against the real resource capabilities of the system. From the ministries down to the enterprises, there is constant pressure on the planners to approve and finance the greatest possible number of investment projects. This constant drive for investment is closely related to what Kornai (1980a) has called the "soft" budget constraint. Because enterprises do not bear any risk for failed investment projects and are not forced to show a profit from them, there is no automatic mechanism to limit investment demand at the enterprise level. This is in stark contrast to the situation in the capitalist economies, where

investment demand is extremely sensitive to business expectations. After the 1973-75 economic disturbances, the slowdown in market economies automatically depressed investment demand, thereby reducing domestic absorption. In planned economies, investment pressures continued unabated until the planners began to try to restrain them in response to persistent balance-of-payments difficulties. A sustained slowdown in investment growth did not begin in Eastern Europe until 1978 or later, several years after such slowdowns had begun in the advanced industrial economies.

The recurrence of investment cycles in Eastern Europe throughout the postwar period lends support to the interpretation of delayed efforts by planners to reduce investment growth rates as weakness of economic control. Kornai (1982) and Portes (1980), among others, have adopted this interpretation. Investment cycles have long been recognized as a feature and policy problem of planned economies. Because of taut planning, rapid growth objectives, and competing demands for investable resources among enterprises and regions, the first years of a plan period usually see the rapid introduction of numerous new investment projects and an excess of actual over planned investment targets. Gradually, as the planners respond to the pressures and imbalances created by excessive investment, they curb investment growth. The initiation of new projects is more strictly controlled, the pace of expenditure on some or all of the projects in progress is slowed, and actual investment falls below target. When investment is in excess of plan targets, there is an adjustment in some other component of aggregate demand. Given the planners' desire to maintain steady growth in consumption, this frequently means that the expansionary phase of the investment cycle is characterized by an excess of net imports (or a shortfall in net exports) relative to plan level, resulting in what Bauer (1978) calls an "export-symmetrical" investment cycle.

Under certain economic conditions, acceleration of investment demand was a rational policy response to changed international conditions in the mid-1970s. Foreign capital was cheaper and investment projects to economize on relatively more expensive material and fuel inputs looked more attractive, as did projects aimed at import substitution or export promotion to reduce the trade deficit over the medium run. Available evidence on the developing economies suggests that many of them took advantage of these conditions to increase investment. The result was a noticeable increase in investment rates (expressed as a percentage of gross national product) throughout the developing world over the 1973-78 period (part a of Table 8). Part b of Table 8 indicates that a similar increase occurred throughout Eastern

Europe. Investment rates in the developed market economies, in contrast, remained constant as the investment-depressing effects of demand and output contractions outweighed the investment-stimulating effects of lower real interest rates and new relative prices.

Although an increase in the investment effort may have been a rational response in Eastern Europe, as it seems to have been throughout much of the developing world, it certainly made the task of reducing the rate of growth of domestic absorption more difficult, given the relative inflexibility of consumption growth in the short run. Yet if the investment produced changes in the production structure that allowed for an increase in exports or a reduction in imports, the trade deficits associated with the investment effort in the short run would be followed by trade surpluses in the medium run. The real question

Table 8
COMPARATIVE INVESTMENT RATES

a. Eastern Europe: Gross Fixed Investment as a Share of Net Material Product (constant price estimates)

Country	1966-70	1966-74	1974-79
Bulgaria	35.9	35.4	37.2
Czechoslovakia	31.1	32.2	34.2
GDR	27.7	28.3	30.6
Hungary	32.9	34.1	37.1
Poland	28.0	31.1	38.3
Romania	35.8	36.3	40.0
Average	31.9	32.1	36.2

b. Developing and Newly Industrializing Economies: Gross Domestic Fixed Investment as a Share of GDP (current price estimates)

Country	1963-73	1973-79
NICs	21.9	24.2
Brazil	18.2	23.4
Korea	21.4	27.0
Mexico	20.1	24.5
Portugal	20.6	22.1
LDCs	13.9	15.2

SOURCES: East European figures calculated from data presented in United Nations, Economic Commission for Europe, *Economic Survey of Europe*, various years; figures for developing and newly industrializing economies from Balassa, Barsony, and Richards (1981).

about the rationality of persistent investment growth after the 1973-75 disturbances is, Were the investment projects chosen efficient under the new set of international conditions? To answer this question, it is necessary to look in more detail at policy responses to international disturbances at the microeconomic level.

Perhaps the easiest place to begin is with the price effects of the 1970s terms-of-trade shifts. In market systems, changing relative prices on world markets signaled producers and consumers to adjust their behavior to new scarcities. The resulting microeconomic adjustments took many forms, all of which reduced trade deficits caused by external disturbances in the medium run. Higher energy prices encouraged both producers and consumers to conserve energy and reduce their use of energy-intensive products. The pattern of consumption shifted away from goods that were relatively more expensive under new world conditions to those that were relatively cheaper. Changing patterns of consumption, along with changing world market conditions, affected the relative profitability of different enterprises, sectors, and regions and touched off a reallocation of labor and capital resources. New patterns of investment emerged to reflect the new patterns of profitability.

How much and how fast these adjustments came into play in a given economy depended largely on the extent to which the country's domestic relative price structure for tradeable goods reflected world relative prices. In the developed market economies, domestic relative prices were extremely sensitive to world market conditions (except in the protected food and agriculture sectors), and micro adjustments to world price disturbances were rapid and automatic. Developing economies had considerable variation, in large measure attributable to differences in underlying developmental strategies. As Balassa's extensive empirical work has demonstrated, microeconomic adjustments were more effective in countries following outward-oriented strategies based on realistic exchange rates, relatively free trade, and export-promotion investment than in countries following inward-oriented strategies based on overvalued exchange rates, quotas and tariff import protection, and import-substitution investment (Balassa, 1981a, 1981b, 1982a; Balassa, Barsony, and Richards, 1981).

In outward-oriented countries, the links between changing world profitability conditions and changing domestic profitability conditions were strong, and micro adjustments occurred over the medium run. In inward-oriented countries, domestic relative prices were distorted by tariffs, quotas, and overvalued exchange rates. Even though domestic relative prices were usually adjusted to reflect changing world relative prices in these economies, the domestic price structure remained

distorted. This had particularly detrimental effects on the reallocation of labor and capital resources following world economic disturbances. Both the outward-oriented and inward-oriented developing economies responded to these disturbances by increasing their investment effort. But whereas the former chose a pattern of investment consistent with their comparative advantage in world markets, the latter chose a pattern consistent with their distorted domestic price structure. The outward-oriented investment pattern emphasized export-promotion projects and produced rapid export growth that reduced trade deficits. The inward-oriented strategy emphasized import-substitution projects that did not reduce trade deficits sufficiently to service foreign loans and maintain high rates of economic growth. These countries eventually confronted the necessity of using macro slowdowns or reductions in absorption to correct external imbalances.

The comparison between outward-oriented and inward-oriented developing economies is instructive because the East European economies can be viewed as extreme versions of inward-oriented economies. Their domestic price structures are insulated from world prices by an elaborate system of taxes and subsidies, and their production structures and investment strategies are based on import-substitution and autarky rather than on export promotion.¹⁹ There were no automatic micro adjustments to world disturbances, for two reasons: (1) World price changes did not automatically produce domestic price changes; and (2) even when domestic price changes were introduced as a policy response, most micro decisions in the economy were not sensitive to relative prices. Consequently, changes in domestic relative prices were a necessary but not a sufficient condition for effective micro adjustments. Also required were more basic modifications of the economic system to make production and investment decisions responsive to the changing terms of world trade and changing world demand. Such modifications were not forthcoming, and as a result, micro adjustments depended on changes in plan priorities and planners' pressure rather than on automatic decentralized reactions to changing prices. The planners were slow to adjust their structural objectives to changed world circumstances, for reasons discussed later.

The micro adjustments in production and investment structure in response to world disturbances in Eastern Europe were largely ineffective, at least through the end of the 1970s. This conclusion is

¹⁹For the purposes of this discussion, Hungary is treated as similar to the rest of Eastern Europe. This treatment overlooks important differences between the Hungarian economic system and more traditional planned economies. The case study of Hungary in Sec. II will elaborate on these differences and their implications for the effectiveness of micro responses to world disturbances.

supported by the indicators of productivity listed in Table 9. Micro inefficiencies distorted the investment effort that followed these disturbances. Consequently, this effort neither reduced the trade deficit nor generated the foreign exchange required to pay back foreign borrowing. The failure of microeconomic adjustment policies required harsh macroeconomic policies. By the end of the decade, persistent trade deficits and rising debt-service ratios required slowdowns in domestic growth and absorption throughout Eastern Europe and in the inward-oriented developing countries. In the outward-oriented developing countries, efficient export-promotion and import-substitution projects, financed in part by foreign borrowing, reduced trade deficits and debt-service ratios over the medium run and provided the foreign exchange required for debt servicing without any slowdown of domestic growth rates; in some cases, there was even an acceleration.

A COMPARATIVE ANALYSIS OF ADJUSTMENT CAPABILITIES

As the foregoing analysis indicates, important cross-country differences in policy responses to the external disturbances of the 1970s produced cross-country differences in economic performance. To understand why countries adopted different policy responses and why some were more successful than others, it is necessary to look at each country's ability to introduce effective policy responses.

In general, the less-developed an economy, the more restricted were its adjustment capabilities. For example, because of their more limited access to private international capital markets, the least-developed economies were less able than the more developed economies (especially the NICs) to borrow either to finance a domestic adjustment program or to postpone one. At the same time, the costs of a domestic stabilization program that cut into domestic output and absorption growth rates were very high in the least-developed economies, where these growth rates were already low and the population lived on the margin of subsistence. In the more-developed economies, the burden of an adjustment stabilization program was less onerous. The adjustment capabilities of Eastern Europe were similar to those of the NICs: The East European countries had access to foreign capital markets in their policy responses to external disturbances; stabilization responses did not require absolute declines in output and were consistent with continued growth in living standards, already substantially above subsistence levels.

ECONOMIC ADJUSTMENT IN EASTERN EUROPE

Table 9
PRODUCTIVITY INDICATORS IN EASTERN EUROPE

a. Average Annual Percent Change in Productivity

Item	1971-75	1976-78
Labor productivity		
Bulgaria	6.6	5.8
Czechoslovakia	6.0	4.6
GDR	6.0	4.5
Hungary	6.2	5.7
Poland	7.4	6.6
Romania	6.3	7.2
Capital productivity		
Bulgaria	-0.6	-3.3
Czechoslovakia	1.1	-0.9
GDR	-0.2	-0.9
Hungary	-1.6	-2.4
Poland	0.6	-3.7
Romania	0.7	-1.5
Total productivity^a		
Bulgaria	3.7	2.2
Czechoslovakia	4.0	2.4
GDR	3.5	2.3
Hungary	3.1	2.5
Poland	4.7	2.5
Romania	4.1	3.7

b. Gross Incremental Capital Output Ratio

Country	1971-75	1976-79
Bulgaria	NA	6.1
Czechoslovakia	5.9	9.1
GDR	5.3	7.7
Hungary	5.8	9.5
Poland	3.7	12.2
Romania	3.3	5.0

SOURCES: United Nations, Economic Commission for Europe, *Economic Survey of Europe*, various issues.

^aThe figures for total productivity were obtained by combining the growth rates of labor and capital productivity with weights of 0.6 for the former and 0.4 for the latter. The relationship approximates that between the wage fund and the sum of an imputed capital charge and an allowance for depreciation of fixed assets.

The structural characteristics of the East European economies were less favorable to adjustment capability than were their developmental characteristics. Because of the composition of their production base and the resulting dependence on imports of raw materials and energy, the terms-of-trade effects of the 1973-74 and 1979-80 world economic disturbances on many of these economies—especially Hungary, the GDR, and Czechoslovakia—were particularly large. In this respect, these economies were similar to the NICs. In the short run, both the NICs and the East European economies had limited opportunities to substitute domestic goods for the more expensive energy and raw-materials imports. Only a medium-run import-substitution program or a short-run macro stabilization program could reduce import requirements for these products. Of course, in the short run, the East Europeans were helped out by Soviet subsidies, whereas the NICs were forced to make all of their purchases at world market prices.

The export structure of the East European economies also worked to their disadvantage following the 1973-74 trade disturbances. After the shortfall in export demand in 1973-75, developing countries with a larger share of manufactured goods in their total exports to developed market economies had better export performance than other developing countries. This was the result of an apparent increase in the income elasticity of demand in the developed market economies for the manufactured exports of developing countries. By 1978, this increase had offset one-fourth of the export slowdown due to the deterioration of growth in the developed economies (Balassa, 1982a). The NICs, with a preponderance of manufactured goods in total exports to the developed market economies, were the greatest potential beneficiaries of this development. Since the East European economies had a smaller share of manufactured goods in their total exports to the developed market economies, they were less able to benefit. In addition, East European manufactured exports were not granted preferential treatment in the industrial market economies as were the exports of many other developing economies. Indeed, because the manufactured exports of several East European countries (including Hungary, Czechoslovakia, Bulgaria, and Romania) were in competition with highly import-sensitive sectors in the developed economies, those exports were more subject to protectionist measures (Marer, 1981). Romania and Hungary were adversely affected by protectionism that limited their agricultural and food exports to West European markets.

Finally, some observers have argued that the East European countries are residual suppliers on developed-country markets (Holzman, 1979). According to this argument, the slowdown in demand in these countries after 1973 would have had a more immediate and dramatic

effect on the demand for East European exports than on the demand for the exports of other developing countries. Although this hypothesis does not appear to be true for broad categories of East European exports (see Vanous, 1978a), it may have been true for certain types of manufactured goods. Altogether, the adverse structural characteristics of East European exports to developed-country markets reduced short-run adjustment capabilities by limiting the prospects for a policy-induced export expansion to counter rising trade deficits. Such a policy response required a medium-term horizon to allow for investment in new export projects targeted at Western markets.

In developed market economies, which have close links between domestic and foreign prices and agents that are responsive to changing price signals, automatic adjustments were bolstered by policy measures to limit the balance of payments and inflationary effects of external shocks. The quick stabilizing reaction of policymakers in the developed economies is understandable in light of the growing concern about inflation that predated these shocks. The inflationary terms-of-trade shocks of 1973-74 and 1979-80 were quickly countered by deflationary policy reactions. Had the leaders of the developed economies been more concerned with reducing unemployment and accelerating output growth, the stabilization policy responses would probably have been less immediate and less severe.

In the East European economies, domestic prices did not automatically adjust to reflect world price relations, and neither producers nor consumers had any immediate incentive to adjust their behavior. Adjustment in the East European economies hinged on the ability of planners to introduce effective, timely policy responses. But the systemic features of these economies militated against the introduction of such responses. At the macro level, effective adjustment required a reduction in output growth, a reduction in absorption growth, or a combination of both. For several reasons, these stabilization responses were difficult to realize. First, planners throughout Eastern Europe had a commitment to rapid economic growth as a means of achieving simultaneous increases in industrialization and the standard of living. This commitment predated the external disturbances of the 1970s and shaped planners' responses to it, just as the growing commitment to reducing inflation shaped policy responses in the developed market economies.

Second, the planners had only imperfect control over the rate of growth of absorption because of their inability to control investment demand. The economic system encouraged excessive investment demand that could be capped only when its deleterious macro effects reached a critical state. Improved control over investment demand

required fundamental systemic reforms aimed at establishing binding standards for evaluating competing investment claims and imposing at least some of the risks and penalties of bad investment decisions on decentralized enterprise actors.

Third, because of "social norms" or expectations, planners were unable or unwilling to cut absorption growth by reducing consumption growth, because of their concerns about possible political consequences. Even in Hungary, where the leadership had a reserve of legitimacy on which it could count during periods of economic difficulty, the leadership needed a substantial lead time in which to persuade the population of the need to reduce consumption growth. In Poland, repeated incidents of worker unrest had shorn the leadership of all but temporary legitimacy based on gains in consumption. In Romania, a long-term policy of keeping consumption growth at a minimum left the leadership little room for further reduction.

It is easy to understand planners' reluctance to introduce stabilization measures, but by delaying their response, they made the adjustment process more painful. Instead of a gradual decline in output, investment, or consumption growth over several years, they were faced with sharp and sudden declines when unsustainable trade imbalances and debt-repayment problems finally forced them to act at the end of the 1970s. In this respect, their experience is consistent with the evidence on stabilization programs in developing countries. The longer such programs are delayed, the more painful are their effects on domestic growth, investment, and living standards.

At a micro level, the planners' ability to introduce effective policy responses to the disturbances of the 1970s was constrained by the inflexibilities and irrationalities in resource allocation of planned economies. Changing relative prices and demand conditions on international markets necessitated a reallocation of resources among sectors, enterprises, and investment patterns. But such a reallocation was difficult to realize quickly in the East European economies. First, the centralized, bureaucratic, decisionmaking style of the planning system impeded flexible responses to changing market conditions. This style is much better suited to repeating past patterns of production and investment than to introducing new ones. Second, the extent of the required reallocation contributed to the planners' inability and reluctance to act.

The production structures in the East European economies had been built up behind high walls of protection on the basis of domestic and intrabloc economic objectives. Much of the existing capital stock was noncompetitive on nonbloc markets even before the 1973-74 economic disturbances, leading the East European countries to toy with the idea

of economic reform as far back as the 1960s; this also explains why most of them had embarked on a plan of large-scale importation of Western technology.

The necessary adjustments in production structure were made even more critical by the disturbances of the 1970s. The dramatic relative price changes on world markets made a substantial fraction of the underlying production structures of the East European economies unprofitable. Had the planners allowed enterprise and sectoral profitability rates to adjust immediately to these new prices, and had they allowed capital and labor resources to move accordingly, they would have had to write off a large portion of their existing productive base. They apparently preferred a policy of gradual adjustment, whereby new investment and production decisions were based on the new profitability conditions, and the production structure would adjust gradually to these conditions. In the meantime, large-scale subsidies were required to support unprofitable firms.

A third reason for the planners' inability and reluctance to promote the necessary micro adjustments was the political sensitivity of the distributional burden associated with such adjustments. In market economies, changing relative prices produced by world economic disturbances had several distributional effects. Income was redistributed toward producers of energy and energy-substitutes and away from consumers and producers who used these goods. Changes in relative prices touched off by changing conditions of demand and supply benefited workers and property owners in industries in which real wages and profits increased either absolutely or relatively and adversely affected those whose real wages or profits decreased or remained constant. These microeconomic changes were the mechanism whereby markets redirected labor and capital resources to their most profitable uses under the new world conditions. Even in market economies with fairly smooth micro adjustment, these changes created problems of adjusting to lower relative incomes and to lost jobs.

In Eastern Europe, the potential distributional effects of micro adjustment were in conflict with existing social norms. Changing relative prices could not be allowed to generate enterprise and worker income differentials that were inconsistent with norms of equity. Similarly, changes in enterprise profitability could not be allowed to threaten the norms of full employment and job security.

In summary, deteriorating economic performance in Eastern Europe during the 1970s was the consequence of adverse external shocks and errors in internal policy responses to them. Policy errors reflected weaknesses in adjustment capabilities caused by systemic features of the East European economies. In the parlance of development

literature, internal policy errors that are at least analytically independent of external shocks constitute "internal shocks" that would have caused deteriorating economic performance even in the absence of adverse external conditions. In Poland and Romania, excessively ambitious development programs with attendant macroeconomic imbalances were internal shocks with predictable negative results. As another illustration, the long-term, inward-looking development strategy embodied in all East European plan priorities can be thought of as an internal shock that would have continued to produce recurrent balance-of-payments difficulties in the 1970s even in the absence of external disturbances. Overall, the effects of internal shocks and adverse international economic conditions combined to make the 1970s a very difficult time for the East European economies.

An intriguing policy-relevant question remains: What were the relative contributions of external shocks and internal policy errors to economic difficulties in Eastern Europe? In the absence of more adverse external conditions, would East European economic performance have deteriorated as sharply as it did by the end of the 1970s? Precise answers are possible only for individual cases. The subsequent sections of this report use the general framework developed above to answer this question for Hungary and Romania.

II. ECONOMIC ADJUSTMENT IN HUNGARY

CONDITIONS AT THE ONSET OF EXTERNAL ECONOMIC DISTURBANCES

The Hungarian economic system in 1973 differed considerably from the other East European economies, because of the comprehensive economic reforms of 1968. To understand Hungarian adjustment options and strategies in response to the economic disturbances that were about to occur and how they differed from the policies pursued elsewhere in Eastern Europe, it is necessary to review those reforms and describe the Hungarian economy after their introduction.¹

The 1968 Reforms

The 1968 reforms bolstered the basic agricultural reforms that had been introduced in the 1950s, when obligatory plan targets and compulsory deliveries were abolished, the prices of agricultural products were raised, and several products were allowed to be sold in farm markets at freely determined prices. In 1968, rural cooperatives were provided with the legal and financial basis for their operations. Limitations on livestock kept on household plots owned by cooperatives, state farms, and industrial and other workers were eliminated; and the government generally supported cultivation on those plots. In addition, the government encouraged the establishment of ancillary activities, including construction and local manufacturing, by agricultural cooperatives.

The 1968 agricultural reforms reaffirmed one of the basic principles of Hungary's development strategy—the encouragement of agricultural production to meet the twin objectives of agricultural self-sufficiency and an exportable surplus. This principle has been critical to Hungary's adjustment capabilities.

The industrial reforms of 1968 dismantled the traditional quantitative production targets and centralized allocation of materials, replacing them with a "guided market" allocation system, under which five-year plans became guides for longer-term development objectives and state investment policy, but centrally assigned annual production plans for enterprises were eliminated. In their stead, responsibility for

¹The following description draws heavily on earlier works by Portes (1977) and Balassa (1982b).

production decisions was delegated to enterprises, which were to formulate those decisions in response to incentives on regulated markets.

Profits, rather than gross output or gross sales, became the predominant indicator of enterprise success, the source of incentive payments for managers and workers, and the source of decentralized enterprise investment funds. Enterprise incentives depended on profits through a complicated sharing arrangement that divided gross profits into four parts: tax, a reserve fund, a sharing fund for managerial and worker bonuses, and a development fund to finance enterprise investment. Although the tax system prescribed the breakdown of profits among the funds and the marginal tax rate was high (especially for the sharing fund), both the sharing and development funds varied directly with total profits, and the remuneration of both managers and workers varied with the sharing fund. The growing influence of the profit motive on managerial and worker behavior after the reforms was reflected in managerial surveys emphasizing the role of profits in decisionmaking and in the growing interenterprise earnings differentials among workers.

To guide the transition to and development of the new system, the authorities retained several policy instruments for influencing market conditions, the most important of which were price policy, related tax-subsidy policies, and investment policy. A major restructuring and liberalization of prices accompanied changes in the incentive system. Adjustments brought producer prices closer to costs. Considerable freedom for price changes was introduced, although many prices remained centrally fixed or subject to maxima, and the National Price Office disposed of many techniques for indirect price control. The consumer price structure remained unchanged, although there was some unification of turnover taxes and substantial scope for enterprises to change prices of goods not regarded as bare necessities. Domestic prices of traded goods were linked more closely to foreign prices, because both producers and users were, in principle, free to import or export, with foreign prices converted directly into domestic prices by uniform ruble and dollar exchange rates. In practice, informal restraints on foreign trade decisions and the continued extensive use of import tariff and export subsidies drove wedges between domestic and foreign prices, but the complete separation of such prices by the price-equalization mechanism of the previous command system was eliminated.

In addition to foreign-trade taxes and subsidies, the authorities retained several other tax and subsidy instruments, including enterprise taxes on profits and wages, price subsidies on domestic sales, and direct lump-sum production subsidies to unprofitable enterprises. In

principle, these taxes and subsidies were to apply as uniformly as possible at the sectoral level, so that all firms in the same sector would face similar conditions, and profits would properly measure enterprise performance. In practice, both the extent of subsidies and their differentiation among individual enterprises remained substantial, thereby reducing the effectiveness of profitability as an indicator of enterprise performance and distorting the interenterprise earnings differentials of managers and workers.

The state retained decisionmaking power over all infrastructural and social investments and over all manufacturing investments that increased capacity by over 25 percent, required substantial imports, or involved the establishment of new factories. Also, firms that made their own investment decisions often had to supplement their financial resources by bank credits or government funds, which gave the authorities a considerable voice in these decisions. Altogether, an estimated 75 to 80 percent of enterprise investment after the reforms involved state or bank funds and hence directly or indirectly reflected state-established investment criteria (Hare, 1981; Hewett, 1981; Kornai, 1980b). Moreover, the reforms did little to "harden" the soft-budget constraints that encouraged substantial investment demand by enterprises, nor did they correct the macro and micro inefficiencies associated with the centralized planning of investment in the traditional command system. The result was a continuation of investment cycles, with deleterious effects on both macroeconomic stability and the efficient allocation of investment resources.

Two basic objectives underlay the continued use of state instruments to regulate the economy after the 1968 reforms: First, within the confines of the regulated market system, the authorities wanted to retain central control over the broad features of structural change, foreign economic relations, income distribution, and macroeconomic equilibrium. The goals of the reforms were greater efficiency, more innovation and initiative, and the like, but not at the cost of surrendering central authority in these areas of economic policy. Second, the authorities wished to slow what otherwise might be too rapid a transition to the new system. The entire Hungarian industrial structure had been built up under the distorted price signals and incentives of the command planning system. Unprofitability and losses in the post-reform environment threatened this structure, and reallocation of capital and labor resources among sectors and firms was required. Such a reallocation, with its associated job insecurities, frictional unemployment, and earnings differentials, also threatened fundamental economic objectives, including full employment, a high level of individual job security, the maintenance of acceptable enterprise and worker income

differentials, and stability in the price structure. To safeguard these objectives, the authorities used their many instruments to keep the transition process within manageable economic and political limits. The risk in such a strategy, of course, was that attempts to moderate the speed of transition to the new set of market signals might undermine the transition altogether.

Hungarian Economic Performance After the 1968 Reforms

On the eve of the world economic disturbances of 1973-75, the Hungarian authorities could look back with some satisfaction on economic performance in the post-reform years. Between 1967 and 1973, the growth rate of net material product increased to 6.3 percent, from 5.6 percent in 1960-63 and 4.3 percent in 1963-67; and the growth rate of consumption (both public and private) increased to 5.7 percent from 4.6 percent in 1960-66. Although industry led the post-reform expansion, with growth rates averaging 7 percent per year, agriculture also performed well. The growth rate of gross agricultural output nearly doubled, reaching about 3 percent per year between 1967 and 1973. Because the population was growing only at 0.3 percent per year, gross agricultural output per capita grew at nearly the same high rate. Perhaps even more dramatic than increases in production growth rates were apparent improvements in efficiency in industry, whose growing inefficiencies had been a basic motivation of the reform. Thus, according to an unpublished study by Tardos (cited in Balassa, 1982b, p. 11), the growth rate of total factor productivity in Hungary more than doubled between 1962 and 1972.

In volume terms, exports increased at a rate nearly double that of net material product between 1967 and 1973. In value terms, exports to the West (including both developed and developing market economies) increased faster than the average and by 1973 amounted to 44 percent of the total value of exports (Balassa, 1982b). Over the entire 1968-73 period, the growth of Hungarian exports to the West exceeded that of other socialist economies, with the exception of Romania, whose oil exports to the West had grown rapidly. As a result, both total trade and trade with the West were approximately in balance.

Even before the onset of international disturbances, however, it is apparent that there were some trouble spots. In 1971, as at the beginning of previous five-year plans, there was a sharp acceleration of investment growth, which, along with rapid growth in consumption, produced a rapid increase in total domestic demand and growing macroeconomic imbalance (see Table 10). With domestic demand

growing more rapidly than national output, both the ruble and dollar trade deficits increased to unprecedented levels, as did consumer prices, whose rise over the year reached 2 percent for the first time. In 1972-73, the authorities restored approximate equilibrium, mainly by administrative cutbacks in investment, along with stricter controls on real income growth.

The sharp deceleration in investment and the moderation of consumption during these years increased political pressure for a more rapid growth of domestic demand in 1974. The initial domestic macroeconomic conditions in 1974, when external conditions deteriorated, were not auspicious. Even in the absence of a deterioration in the terms of trade and a slowdown in foreign export demand on Western markets, the rapid growth of domestic demand in Hungary in 1974 would have led to a considerable deterioration of the trade balance. As it was, the external shocks made the situation much worse.

The failure of the Hungarian authorities to maintain control over macroeconomic conditions in 1971 and again in 1974 can be viewed as an internal shock or policy error that was partly responsible for deteriorating economic performance. On a more fundamental level, this internal shock indicated how little the reforms had done to remove the systemic underpinnings of recurrent investment cycles in the

Table 10
MACROECONOMIC INDICATORS OF HUNGARIAN
ECONOMIC PERFORMANCE, 1971-81
(Average annual growth rate, in volume terms)

Year	Net Material Product	Domestic Absorption	Consumption	Net Investment
1971	5.9	11.3	5.4	30.4
1972	6.2	-3.7	3.1	-21.4
1973	7.0	2.0	3.7	-3.8
1974	5.9	12.7	6.9	34.2
1975	6.1	6.4	4.7	11.5
1976	3.0	1.2	2.1	-1.4
1977	8.0	6.2	4.6	11.0
1978	4.2	10.0	4.9	23.8
1979	1.9	-5.5	2.9	-24.9
1980	-0.8	-1.9	1.4	-12.3
1981	1.8	-0.1	2.4	-7.0

SOURCES: 1971-80 figures from Balassa (1982, p.14); 1981 figures from WEFA, CPE Service, *Current Analysis*, March 19, 1982.

Hungarian economy. Most observers (e.g., Portes, 1977; Marer, 1981; and Brown and Tardos, 1980) agree that the Hungarian authorities maintained reasonably tight control over real incomes and consumption during the post-reform period. In contrast, they exercised only imprecise and erratic control over investment, with the result that both investment growth and the growth of domestic demand fluctuated sharply from year to year. Their inability to control both the level and composition of investment delayed the introduction of effective adjustment responses to external shocks.

A second trouble spot was the gradual recentralization trend that began in 1972, at least partly in response to growing concern over the reforms' effects on income inequalities. Under the new market and incentive conditions, profitable enterprises really were able to pay more than the unprofitable, large state industrial enterprises, leaving manual workers at a disadvantage. Peasants, workers in cooperatives, and the self-employed also tended to gain at the expense of manual workers.

As concern over the potential political consequences of developing income differentials increased, so did Party pressures for greater intervention to slow the pace of the reform process. These pressures culminated in a series of decisions that led to some recentralization by the end of 1973, reflected in a tightening of price-control regulations, a growing volume of subsidies to inefficient firms, and a weakening of the links between worker earnings and enterprise profitability in state industry. The recentralization that actually occurred, however, was fairly restrained. Despite a heated political debate on the drawbacks of the reform, its opponents were unable to bring back central physical allocation of inputs, obligatory plan targets, and incentives based on their fulfillment, or indeed anything else characteristic of the traditional command planning system.

On balance, the reformed Hungarian system had many features that made the initial conditions for effective adjustment to external disturbances auspicious, at least in contrast to the rest of Eastern Europe. Flexibility was perhaps the most positive feature. Whether adjustments occurred and whether they worked to the benefit of the economy as a whole depended, of course, on the continued use of profitability as a guide to enterprise decisionmaking and on the continued link between relative prices and market scarcities.

Another feature that enhanced Hungary's adjustment capabilities was its strong agricultural base. Hungary had realized a substantial exportable surplus in agriculture: In 1973, an estimated 38 percent of total Hungarian exports to nonsocialist countries and an estimated 16 percent of total Hungarian exports to bloc countries consisted of food and food products (including livestock). Growing exports of food were

not achieved at the expense of increases in domestic consumption, because available domestic food supplies were usually more than adequate to cover domestic food demand at subsidized prices.² Hungary's food exports could be directed to world markets without disrupting the equilibrium of sensitive domestic consumption markets and running the attendant economic and political risks.³ Similarly, on the import side, Hungary did not have to depend on large imports of agricultural and food products⁴ as did other East European economies.

Two other positive features of the Hungarian system were the unity of its leadership behind the reform and the high level of popular support for President Kadar. With the changes in international conditions that began in 1973, Hungary's policy options deteriorated and its sustainable real income levels dropped. The ease and speed with which policies could be formulated to extract the necessary sacrifices depended in large part on the unity of the leadership and on the willingness of the population to accept such sacrifices without social and political upheaval.

On the negative side, certain features of the Hungarian system promised to make the adjustment task more difficult. The reformed system inherited a trade and production structure that exhibited most of the shortcomings traditionally associated with central planning. Industry was excessively diversified for a country of Hungary's size and development level, the result of decades of an inward-looking development strategy.⁵ As a consequence, under conditions of world market competition, a substantial portion of Hungary's industry was threatened with persistent losses. Industrial units were excessively large and the degree of industrial concentration excessively high by comparative standards. Large industrial units tended to be less flexible and more bureaucratic in their decisionmaking, and they benefited from preferential policies that distorted market signals and deflected

²Between 1965 and 1975, the per capita consumption of high-quality foods increased rapidly in Hungary, as a result of conscious policy choices, often resulting in reduced exports or increased imports of food to meet domestic consumption objectives. Domestic shortages were rare, and when they occurred, as in 1975-76, the authorities reduced exports of some items and increased imports of others (O'Reiley, 1977).

³Between 1971 and 1975, agricultural output per capita in Hungary reached 89 percent of the U.S. level. On the assumption that 80 percent of the U.S. output per capita was necessary for self-sufficiency, Hungary was the only East European economy to achieve an exportable surplus, equal to about 10 to 12 percent of domestic output, by that time (Lazarcik, 1977).

⁴By 1974, Hungary had an export surplus in all major agricultural products, with the exception of animal feeds and sugar, which continued to be net imports despite efforts by the Hungarian authorities to eliminate them (O'Reiley, 1977).

⁵In 1972, the Hungarian industrial structure closely resembled that of West Germany, a larger, more developed market economy (Varga, 1980).

resources from more efficient uses. The high level of industrial concentration meant that competition on many domestic markets was limited or absent altogether.⁶ Hungarian industry, like its East European counterparts, was also excessively energy-intensive, reflecting its composition, its bias toward heavy industrial branches, and the weakness of incentives for energy conservation at the enterprise level.⁷ In addition, Hungarian industry was confronting a growing labor shortage in the mid-1970s that made growth prospects increasingly dependent on productivity and efficiency gains or, in their absence, on an increase in the already substantial portion of resources devoted to investment.

On the policy side, the prospects for effective adjustment were limited by the leadership's unwillingness to permit the undesired distributional consequences of market adjustment to come into play. Policies to suppress distributional effects in Hungary impeded adjustment rather than promoted it. Prospects were also limited by the inability of the Hungarian authorities to maintain macroeconomic control, without which the rapid macro responses to external shocks that marked the adjustment process in the advanced industrial economies proved infeasible in Hungary.

EXTERNAL SHOCKS, ADJUSTMENT PROBLEMS, AND POLICY RESPONSES: 1974-76

External Shocks

The effects of external shocks on the Hungarian economy, in both its Western and Eastern trade, may be assessed with an accounting framework developed by Balassa. This framework measures the balance-of-payments effects of the terms-of-trade deterioration and export slowdown associated with these shocks. The methodology is summarized in the Appendix to this report, and a complete description is available in several of Balassa's works (e.g., Balassa, 1981a, 1981b; Balassa, Barsony, and Richards, 1981). The discussion here will describe the methodology only to the extent necessary to interpret the results.

⁶According to a survey cited by Balassa (1982b), after the reforms, 40 percent of the firms did not confront competition from domestic firms, 48 percent experienced some competition, and only 12 percent met strong competition. Also, 46 percent did not experience any import competition, 37 percent had some competition, and 17 percent faced strong import competition.

⁷Correcting for differences in industrial structure, the IBRD has estimated that the energy intensiveness of industrial production in Eastern Europe is 50 to 150 percent above that in Western Europe.

The point of departure for the Balassa framework is the balance-of-payments identity, according to which the resource gap or the net flow of external financing required equals the deficit in merchandise trade, nonfactor services, and private transfers. The resource gap is defined here to equal the merchandise trade deficit only, because reliable balance-of-payments information on Hungarian nonfactor services and private transfers is not available for the period under consideration. This approximation should not be very misleading, because nonfactor services and private transfers are small items in Hungary's external relations. In terms of the absorption model, the resource gap is equal to the trade deficit and in an *ex post* accounting sense equals the excess of domestic absorption over domestic expenditure or, equivalently, the excess of domestic investment over domestic saving.

Using the balance-of-payments identity, Balassa compares the resource gap that would have been likely to obtain in the absence of these disturbances with the one that actually developed in their presence. The methodology requires an assumption about what would have happened to the relationship between a country's export and import prices if world relative prices had not changed dramatically in the wake of the oil price increase of 1973. Following Balassa, the assumption adopted here is that Hungary's terms of trade in both Western and Eastern trade would have remained unchanged from average 1971-73 levels through 1978. The actual terms-of-trade deterioration that occurred between 1974 and 1978 is attributed solely to external shocks. An important underlying premise of this approach is that Hungary was a price-taker in both its Western and its Eastern trade. This premise is clearly reasonable for Hungary's Western trade; its validity in Eastern trade is more problematical, because of the negotiated nature of bloc prices, but it still appears defensible, given Hungary's relative size in Eastern markets.

The Balassa methodology can also be used to measure the separate effects of the terms-of-trade deterioration in fuel and nonfuel trade to isolate the effect of rising oil prices. Finally, the total terms-of-trade effect can be decomposed into a pure terms-of-trade effect, calculated on the assumption that trade was balanced (value of exports = value of imports) during 1971-73, and the effect of the rise in import prices on unbalanced trade (the actual deficit or surplus in merchandise trade) during this period, measured in the actual average prices that prevailed between 1971 and 1973.

Tables 11 and 12 present the results for Hungary's trade with Western capitalist (both developed and developing) countries and with bloc countries, respectively. The terms-of-trade deterioration suffered by the Hungarian economy in Western trade was substantial. In each

Table 11
TERMS-OF-TRADE EFFECTS IN HUNGARY'S TRADE
WITH CAPITALIST COUNTRIES, 1974-78
(Millions of dollars)

Item	1974	1975	1976	1977	1978
Effects of Increased Import Prices					
Imports, actual prices	2517.3	2632.2	2635.2	3182.6	3858.3
Imports, 1971-73 avg. prices	1434.4	1392.7	1484.6	1637.1	1862.1
Difference					
Fuels	60.8	117.5	78.0	65.1	119.0
Nonfuels	1022.1	1122.0	1072.6	1480.4	1877.2
Total difference	1082.9	1239.5	1150.6	1545.5	1996.2
Effects of Increased Export Prices					
Exports, actual prices	1895.5	1755.3	1980.3	2253.0	2511.0
Exports, 1971-73 avg. prices	1262.8	1183.6	1323.7	1414.3	1454.8
Difference	632.7	571.7	656.6	838.7	1056.2
Terms-of-Trade Effects					
Pure terms-of-trade effects	367.1	527.8	418.9	553.3	565.5
Unbalanced terms-of-trade effects	83.1	140.0	75.1	153.5	374.5
Total ^a	450.2	667.8	494.0	706.8	940.0
Total as a percent of average (import and export) trade, evaluated in 1971-73 avg. prices	33.4	51.8	35.2	47.8	56.7

SOURCES: Calculations are based on data on the values and prices of Hungary's exports to and imports from capitalist countries, taken from the foreign-trade data bank for Eastern Europe compiled by Vanous (The CMEA-FORTRAM Data Bank of Foreign Trade Flows and Balances of CMEA Countries, 1950-77). Values for 1978-80 trade flows are from Vanous; price indexes for 1978-80 trade flows were calculated using price data in the 1980 *Foreign Trade Yearbook for Hungary* to update the Vanous price series after 1977.

^aCalculated by subtracting the difference in effects of increased export prices from the difference in effects of increased import prices.

year between 1974 and 1978, this loss was equivalent to between 33 and 57 percent of the average value of Hungary's exports and imports (average trade) with the West, measured in average 1971-73 base-period prices. Over the entire 1974-78 period, the loss was equivalent to nearly 45 percent of Hungary's average Western trade. Hungary's average terms-of-trade loss relative to its average trade over the 1974-78 period was greater than the relative losses experienced by Portugal, Brazil, Mexico, India, Korea, Singapore, and Taiwan; somewhat less than those experienced by Chile, Uruguay, and Yugoslavia; and approximately equal to that experienced by Israel (Balassa, 1981a). Of

Table 12
**TERMS-OF-TRADE EFFECTS IN HUNGARY'S TRADE
 WITH BLOC COUNTRIES, 1974-79**
 (Millions of rubles)

Item	1974	1975	1976	1977	1978	1979
Effects of Increased Import Prices						
Imports, actual prices	2020.0	2857.5	3250.9	3703.9	4361.5	4807.9
Imports, 1971-73 avg. prices	1911.0	2166.4	2221.8	2386.5	2643.3	2716.3
Difference						
Fuels	97.6	559.8	691.1	860.0	1117.9	1366.1
Nonfuels	11.4	131.3	337.6	457.4	600.3	725.5
Total difference	109.0	691.1	1028.7	1317.4	1718.2	2091.6
Effects of Increased Export Prices						
Exports, actual prices	2147.0	2667.0	3207.3	3765.5	3898.4	4548.7
Exports, 1971-73 avg. prices	2029.3	2130.2	2426.1	2754.6	2743.4	3020.4
Difference	117.7	536.8	781.2	1010.9	1155.0	1528.3
Terms-of-Trade Effects						
Pure terms-of-trade effects	86.1	260.3	488.6	685.1	818.1	1016.5
Unbalanced terms-of-trade effects	-94.8	106.5	241.1	378.6	254.9	-453.2
Total ^a	-8.7	154.3	247.5	306.5	563.2	563.3
Total as a percent of average (import and export) trade, evaluated in 1971-73 avg. prices	-0.4	7.2	10.6	11.9	20.9	19.6

SOURCES: Calculations are based on data on the values and prices of Hungary's exports to and imports from bloc countries, taken from the foreign-trade data bank for Eastern Europe compiled by Vanous (The CMEA-FORTRAM Data Bank of Foreign Trade Flows and Balances of CMEA Countries, 1950-77). Values for 1978-80 trade flows are from Vanous; price indexes for 1978-80 trade flows were calculated using price data in the 1980 *Foreign Trade Yearbook for Hungary* to update the Vanous price series after 1977.

^aCalculated by subtracting the difference in effects of increased export prices from the difference in effects of increased import prices.

course, these comparisons are somewhat misleading, because the calculations for the NIC economies are relative to their total average trade and those for Hungary are relative to its Western trade only.

Second, in contrast to the pattern observed in many NIC economies, Hungary's terms-of-trade losses did not die out over the 1974-78 period as world relative prices for oil stabilized. In part, this reflects the rather small role of increased fuel prices in the deterioration of Hungary's terms of trade with the West. On average, fuel imports in 1974-78 accounted for only 4.1 percent of Hungarian imports from Western markets (measured in value terms), and the effects of increased fuel prices accounted for only an average of 6.0 percent of the difference between imports valued in base-period prices and actual imports over this period. Between 1974 and 1978, Hungarian terms of trade in food with the West declined by 41 percent. Because food products comprised an average of about 27 percent of total Hungarian exports to Western markets, the terms-of-trade deterioration went far beyond that attributable to changing relative world prices of fuels.

Because Hungary's trade with the West exhibited only a small imbalance during the 1971-73 base period, the major portion of the total terms-of-trade effect was attributable to the pure terms-of-trade effect. Hungary's major problem was not that adverse relative price shifts made an initial trade imbalance even larger, but that such shifts produced a growing imbalance beginning from an initial period of near balance. Confronted with world price shifts on Western markets, the only way Hungary could have avoided growing nominal deficits over the 1974-78 period was to have moved to a position of real surplus, as measured in base-period prices.

Because bloc trade prices adjusted only with a lag to changing world market prices, the calculations in Table 12 are extended through 1979 in an attempt to capture the full intrabloc price effects of the first round of world price disturbances. Two main observations can be made. First, the total terms-of-trade losses in block trade expressed as a percentage of the average value of this trade measured in base-period prices were substantially smaller than the losses suffered in Western trade, equivalent to 11.7 percent of the average value in base-year prices. On a year-to-year basis, the loss increased over time from 7.2 percent in 1975 to an average of 20.3 percent in 1978-79. This pattern reflects in large part the gradual increase in fuel prices charged by the Soviets in bloc trade, in keeping with the bloc pricing rules that went into effect in 1975. An average of 72.2 percent of the total difference between bloc imports valued at base-period prices and actual bloc imports was accounted for by fuel imports. Over the 1973-79 period, Hungary's fuel import prices in bloc trade increased 330 percent. This

increase, although substantial, was less than the increase in Hungary's fuel import prices in Western trade, which increased 470 percent between 1972 and 1978. Bloc fuel prices reflected Soviet willingness to subsidize fuel exports to bloc members, thereby forgoing potential terms-of-trade gains at the expense of the net fuel importers in the bloc.⁸

Second, Hungary ran a slight surplus in its bloc trade in the base period, so the unbalanced terms-of-trade effect is negative and partly offsets the pure terms-of-trade effect over the 1974-79 period. The problem for Hungary in its bloc trade was not that it began the period with an initial deficit, but that the pure terms-of-trade effect was so great that it generated nominal deficits from an initial position of real surplus. The only way Hungary could have prevented a growing nominal deficit in bloc trade was to move from an initial position of surplus to an even larger surplus in real terms. In fact, as Table 12 indicates, over the 1975-79 period, Hungary ran an average nominal deficit of 178.9 million rubles in its bloc trade, compared with its average nominal surplus of 103.2 million rubles during the 1971-74 period.

Table 13 presents the results of using the Balassa framework to analyze the export-demand effects of external disturbances in Hungary's trade with Western capitalist countries (both developed and developing). The calculations follow Balassa's methodology. The effects of changes in foreign demand for a country's exports are measured as the difference between the trend and hypothetical values of that country's exports, measured in real terms in 1971-73 average base-period prices. The trend value of a country's exports measures the realizable volume of exports that would have been consistent with world demand growth in the absence of external shocks. The hypothetical value of a country's exports measures the realizable volume of exports that would have been consistent with world demand growth as it actually evolved over the 1974-78 period. The difference between trend and hypothetical values measures the change in the realizable volume of exports as a consequence of changes in world demand relative to the trend occasioned by external shocks.

To apply the Balassa methodology to Hungary's export trade with capitalist countries, it is necessary to provide estimates of its trend and hypothetical exports. Estimates of the trend value are calculated individually for five categories of Hungarian exports: manufactured goods

⁸According to Hewett (1980), had bloc prices followed world prices according to the schedule prescribed in the 1975 bloc pricing agreement, Soviet terms of trade could have improved by 40 percent between 1970 and 1976. In fact, the actual improvement was well under half that. Soviet willingness to forgo terms-of-trade gains on its fuel exports to the bloc continued through 1979.

Table 13
EXPORT-DEMAND EFFECTS IN HUNGARY'S TRADE
WITH CAPITALIST COUNTRIES, 1974-78
(Millions of dollars, 1971-73 average prices)

Item	1971-73					
	Average	1974	1975	1976	1977	1978
Exports of manufactured goods to developed countries						
Actual (1971-73 prices)	—	—	—	—	—	—
Trend	205.5	279.4	325.8	379.9	443.0	516.5
Hypothetical	205.5	272.3	255.7	341.6	344.6	400.5
Effects (trend - hypothetical)	—	7.1	70.1	38.3	98.4	116.0
Exports of manufactured goods to developing countries						
Actual (1971-73 prices)	—	—	—	—	—	—
Trend	108.3	135.4	151.4	169.2	189.2	211.5
Hypothetical	108.3	156.7	173.8	197.3	219.7	242.8
Effects (trend - hypothetical)	—	-21.3	-22.4	-28.1	-30.5	-31.3
Fuel exports to capitalist countries						
Actual (1971-73 prices)	22.7	13.0	35.6	50.5	54.1	42.8
Trend	22.7	26.4	28.5	30.8	33.1	35.8
Hypothetical	22.7	25.7	22.4	25.2	25.3	24.3
Effects (trend - hypothetical)	—	0.7	6.1	5.6	7.8	11.3
Raw material exports to capitalist countries						
Actual (1971-73 prices)	386.0	368.9	335.9	434.9	435.7	409.7
Trend	386.0	415.0	430.3	446.2	462.7	479.9
Hypothetical	386.0	383.3	391.3	415.6	410.6	415.1
Effects (trend - hypothetical)	—	31.7	39.0	30.6	52.1	64.8
Food exports to capitalist countries						
Actual (1971-73 prices)	402.1	496.2	374.6	315.7	370.0	424.5
Trend	402.7	435.6	453.0	471.1	490.0	509.5
Hypothetical	402.7	392.2	392.2	426.7	426.7	440.8
Effects (trend - hypothetical)	—	43.4	60.8	44.4	63.3	68.7
Total exports to capitalist countries						
Actual (1971-73 prices)	1125.1	1262.8	1183.6	1323.7	1414.3	1454.8
Trend	1125.2	1291.8	1389.0	1497.2	1618.0	1753.2
Hypothetical	1125.2	1230.2	1235.4	1406.4	1426.9	1523.5
Effects (trend - hypothetical)	—	61.6	153.6	90.8	191.1	229.7
Effects as a percent of total exports to capitalist countries (1971-73 avg. prices)	—	4.9	13.0	6.9	13.5	15.8

SOURCES: Calculations are based on data on the values and prices of Hungary's exports to and imports from capitalist countries, taken from the foreign-trade data bank for Eastern Europe compiled by Vanous (The CMEA-FORTRAM Data Bank of Foreign Trade Flows and Balances of CMEA Countries, 1950-77). Values for 1978-80 trade flows are from Vanous; price indexes for 1978-80 trade flows were calculated using price data in the 1980 *Foreign Trade Yearbook for Hungary* to update the Vanous price series after 1977.

(machinery and consumer) to developed Western countries, manufactured goods to developing Western countries, fuels, raw materials, and food. For the first four categories, it is assumed that in the absence of external disturbances, Hungarian exports could have grown at the same rate as exports of all developing countries during 1963-73. The underlying assumption is that Hungary's exports in these categories compete with those of other developing countries on world markets. It is assumed that Hungarian exports of food could have grown at the same rate as food imports of developed market economies during 1963-73. The underlying assumption is that Hungary competes against all food suppliers in the developed West, its main food export market.

Hypothetical values for the first four categories are calculated on the assumption that Hungary's exports could have increased in real terms at the same rate that the same exports of developing countries actually increased between 1973 and 1978. Hypothetical values for food exports are calculated on the assumption that Hungary's food exports could have increased in real terms at the same rate that food imports of developed market economies actually increased between 1973 and 1978. For all export categories, hypothetical export values are calculated using actual levels of exports over the 1971-73 period as the basis.

Table 13 indicates that measured relative to the average value of exports (in 1971-73 base-period prices), the total export-demand effects across all categories of exports were similar to those observed in several NICs, including Brazil, Mexico, Korea, Singapore, Taiwan, and Israel. On average over the 1974-78 period, the total export-demand effects of external disturbances amounted to 10.8 percent of the real value of Hungary's exports to the West.

Second, the export-demand effects of external disturbances in Hungarian Western trade were largest for food exports and for manufactured exports to the developed West. Together, these two categories accounted for nearly 85 percent of the total export effects of external shocks during the 1974-78 period. Both the recessionary conditions in the developed market economies after the oil shock of 1973 and the declining growth in food imports in these economies because of protectionist agricultural policies and excess supply conditions contributed to the erosion of Western demand for Hungarian exports in these categories, which in the base period accounted for 54 percent of total Hungarian exports to the West. Only in manufactured exports to developing countries did export demand actually improve in 1974-78 over earlier trends. Unfortunately, because this category accounted for only 10 percent of exports in 1971-73, the improving demand could not offset the effects of declining demand in the larger categories.

Third, in Hungary, as in the other NICs, the terms-of-trade effects of external disturbances dominated the export-demand effects by a

substantial margin throughout the 1974-78 period. The unfavorable effects of world recession were much less important than conventional discussions of external disturbances often suggest. The main problem confronting the Hungarian economy as a result of external disturbances was that of coping with the deficit-enhancing effects of large terms-of-trade losses; the slowdown in Western export demand made a solution to this problem even more difficult.

It is impossible to make a comparable assessment of the export-demand effects of external shocks in Hungary's bloc trade at this time, because the necessary data are not available. The calculation of comparable trend and hypothetical export values requires information on the real volume of bloc trade in various commodity categories over 1963-78. In principle, such information could be developed from data on values and prices of bloc trade, but because of the well-known deficiencies of such data, that development would be beyond the scope of this study.

In addition, calculation of trend and hypothetical export values for Hungary's exports to bloc markets would encounter at least two major conceptual problems: First, given the customs union nature and political features of bloc trade negotiations, it is difficult to identify the conceptually correct set of suppliers with whom Hungary competes in bloc trade.

Second, within the Balassa framework, a slowdown in the growth rate of exports to bloc countries during 1974-78 relative to that observed in 1963-73 is assumed to reflect a reduction in export demand between the two periods. However, it might be better interpreted as the consequence of growing supply constraints on hard goods within bloc countries, which limited the supply of goods that could be purchased according to normal barter relationships. Indeed, the existence of such supply constraints should be thought of as another external shock to the Hungarian economy.

Adjustment Problems and Policy Responses

The Balassa methodology can also be used to assess the responses of a particular economy to the terms-of-trade and export-demand effects of external disturbances. Four alternative responses can be identified and compared: passive adjustment of additional net financing, export promotion, import substitution, and growth slowdown. The growth-slowdown response is meant to capture the effects of policies to reduce the rate of growth at the macroeconomic level intended to reduce import requirements, and the import substitution response is meant to capture the effects of policies to reduce these requirements without necessitating a macro slowdown.

The passive adjustment response of additional borrowing is measured by comparing the actual resource gap or trade deficit with the trend resource gap, an estimate of the net external finance that would have been required in the absence of external shocks. Trend exports are calculated according to the methodology above. Trend imports are calculated on the assumption that both the income elasticity of import demand and the rate of growth of domestic output remained the same as in the relevant base period. In the case of Hungary, trend imports are estimated using the post-reform (1968-73) period as the base period. During this period, domestic output, defined as net material product, grew 6.4 percent a year, and the average income elasticity of import demand from Western markets was 1.6.⁹ The resulting trend import calculations are presented in Table 14. The excess of the actual resource gap over its trend value represents the additional inflow of external funds required as a consequence of external shocks, after allowing for the effects of other policy responses.

The magnitude of the export-promotion response to these shocks is estimated by the difference between actual and hypothetical exports measured in base-period prices. The excess of actual exports over hypothetical exports, which reflects the level of exports consistent with market demand growth and a constant market share, is the result of policies to promote exports. The import-substitution response is estimated by the difference between actual and hypothetical imports measured in base-period prices. Hypothetical imports in turn are measured by applying the 1968-73 import elasticity to the actual rates of domestic output growth realized over 1974-78. Import substitution, as thus defined, measures the savings in imports realized by a decrease in the import elasticity of demand relative to its 1968-73 level. Finally, the growth-slowdown response is estimated by the difference between trend and hypothetical imports in base-period prices. This difference measures the savings in imports realized by a decrease in the growth rate in 1974-78 relative to its historical 1968-73 trend, holding the import elasticity constant at its historical level.

Table 14 also presents the calculations required for an assessment of the four identified adjustment responses for Hungary in its Western trade. Similar calculations for Hungary's trade with bloc countries cannot be completed because of the difficulties of estimating the export-demand effects of disturbances. By construction, the four responses taken together just offset the effects of the external shocks.

⁹The import elasticity is calculated using underlying value and price data provided by Vanous (see footnotes to Tables 10 and 11). Between 1968 and 1973, total real Hungarian imports from Western capitalist countries grew at a rate of 10.2 percent per year. An average growth of net material product of 6.4 percent implies an import elasticity of 1.6.

Table 14

BALANCE-OF-PAYMENTS EFFECTS OF EXTERNAL SHOCKS IN HUNGARY:
 TRADE WITH CAPITALIST COUNTRIES AND POLICY RESPONSES
 (Millions of dollars)

Shocks and Responses	1974	1975	1976	1977	1978
External shocks					
Effects of higher import prices					
Fuel prices	60.8	117.5	78.0	65.1	119.0
Nonfuel prices	1022.1	1122.0	1072.6	1480.4	1877.2
Total	1082.9	1239.5	1150.6	1545.5	1996.2
Effects of higher export prices					
Food prices	168.7	143.9	131.7	198.0	267.5
Raw-material prices	290.0	202.2	275.3	278.9	344.1
Fuel prices	19.5	55.8	72.2	94.9	93.2
Machinery prices	31.7	57.8	68.6	87.3	107.1
Consumer prices	122.8	112.0	108.8	179.6	244.3
Total	632.7	571.7	656.6	838.7	1056.2
Difference					
Pure terms-of-trade effects	367.1	527.8	418.9	553.3	565.5
Unbalanced terms-of-trade effects	83.1	140.0	75.1	153.5	374.5
Total	450.2	667.8	494.0	706.8	940.0
Total trend exports, base-period prices	1291.8	1389.0	1497.0	1618.0	1753.2
Total hypothetical exports, base-period prices	1230.2	1235.4	1406.4	1426.9	1523.5
Export demand effects					
Manufactured exports to developed West	7.1	70.1	38.3	98.4	116.0
Manufactured exports to developing West	-21.3	-22.4	-28.1	-30.5	-31.3
Fuel exports to West	0.7	6.1	5.6	7.8	11.5
Raw-material exports to West	31.7	39.0	30.6	52.1	64.8
Food exports to West	43.4	60.8	44.4	63.3	68.7
Total	61.6	153.6	90.8	191.1	229.7
Policy reactions					
Actual resource gap (current prices)	621.8	876.9	654.9	929.6	1347.3
Trend resource gap (base-period prices)	184.8	238.2	296.2	358.1	424.4
Additional net external finance	437.0	638.7	358.7	571.5	922.9
Actual exports (base-period prices)	1262.8	1183.6	1323.7	1414.3	1454.8
Hypothetical exports (base-period prices)	1230.2	1235.4	1406.4	1426.9	1523.5
Increase in export market share					
Manufactured goods	-44.3	8.0	-16.3	9.8	65.5
Fuels	-12.7	13.2	25.3	28.8	18.5
Raw materials	-14.4	-55.4	19.3	25.1	-5.4
Total	32.6	-51.8	-82.7	-12.6	-68.7
Hypothetical imports (base-period prices)	1461.5	1609.1	1686.3	1898.8	2031.7
Actual imports (base-period prices)	1434.4	1392.7	1484.6	1637.1	1862.1
Difference (import substitution)	27.1	216.4	201.7	261.7	169.6
Trend imports (base-period prices)	1476.6	1627.2	1793.2	1976.1	2177.6
Hypothetical imports (base-period prices)	1461.5	1609.1	1686.3	1898.8	2031.7
Effects of lower GDP growth on imports	15.1	18.1	106.9	77.3	145.9

SOURCES: Calculations are based on data on the values and prices of Hungary's exports to and imports from capitalist countries, taken from the foreign-trade data bank for Eastern Europe compiled by Vanous (The CMEA-FORTRAN Data Bank of Foreign Trade Flows and Balances of CMEA Countries, 1950-77). Values for 1978-80 trade flows are from Vanous; price indexes for 1978-80 trade flows were calculated using price data in the 1980 Foreign Trade Yearbook for Hungary to update the Vanous price series after 1977.

Rather than slow the domestic growth rate to reduce import requirements or change domestic incentives to promote exports, the Hungarian authorities chose to increase their foreign borrowing. Easy credit-market conditions made this strategy particularly attractive and allowed the planners to postpone difficult decisions. Had the effects of world disturbances been temporary, such a strategy might have been sustainable. As the level of Hungary's gross external debt climbed from \$1.4 billion at the end of 1973 to \$7.5 billion at the end of 1978 (CIA, 1980), and as credit-market conditions began to tighten, the Hungarian authorities were forced to strengthen alternative adjustment policies.

The only other adjustment response of importance during 1974-78 was import substitution. Apparently, Hungary was able to reduce its import elasticity from the West, saving on Western imports without a concomitant reduction in domestic growth. This finding is consistent with evidence presented by Brown and Tardos (1980) and Nyers and Tardos (1979). One possible explanation for the decline is a shift of import purchases from Western to Eastern suppliers as Hungary attempted to economize on its use of hard currency. The calculations presented in Table 15 suggest that such a shift did occur, especially in 1975-76 and again in 1978. Import substitution in the Balassa framework is negative in bloc trade for these years, suggesting an increase in Hungary's elasticity of demand for bloc imports. This elasticity increased from a 1968-73 average of 1.28 to a 1973-78 average of 1.76.¹⁰

Hungarian authorities did not respond to external disturbances by a sustained growth slowdown to reduce imports, but continued to exercise weak control over macroeconomic activity, especially investment, in the post-reform system. During the 1974-78 period, the aggregate growth rate fell below the 1968-73 trend (6.4 percent) in 1974, 1976, and 1978 (see Table 10), and even in those years, the growth-slowdown response was small relative to the passive borrowing response. Finally,

¹⁰This finding is inconsistent with the findings of Nyers and Tardos (1979), who report a drop in the import elasticity from socialist countries from a 1968-73 average of 1.69 to a 1973-77 average of 1.24. The inconsistency may be the result of differences in the underlying data series used to calculate changes in real imports in bloc trade. Such series are very sensitive to alternative measures of bloc prices. Another explanation for the inconsistency may be that Nyers and Tardos report a bloc elasticity only through 1977. Table 15 indicates that there was a large shift to bloc markets and negative import substitution in these markets in 1978, so that the 1973-78 elasticity may show an increase over the 1968-73 level, while the 1973-77 elasticity shows a decrease. Finally, it is important to emphasize that the apparent shift to bloc sources of imports in 1975-76 and again in 1978 was temporary. Over the entire 1975-80 period, imports from non-socialist sources grew twice as fast in volume terms as socialist imports, reversing the 1971-75 tendency.

Table 15
HUNGARIAN IMPORTS FROM BLOC COUNTRIES, 1974-78
(Millions of rubles, 1971-73 average prices)

Total Imports	1974	1975	1976	1977	1978
Actual (current prices)	2020.0	2857.5	3250.5	3703.9	4361.5
Actual (1971-73 average prices)	1911.0	2166.4	2221.8	2386.5	2643.3
Trend (1971-73 average prices)*	1946.4	2108.0	2282.9	2472.4	2677.6
Hypothetical (1971-73 average prices)*	1931.5	2090.1	2171.6	2395.2	2531.8
Import substitution (hypothetical imports minus actual imports)	20.5	-76.3	-50.2	8.7	-111.5

SOURCES: Calculations are based on data on the values and prices of Hungary's exports to and imports from bloc countries, taken from the foreign-trade data bank for Eastern Europe compiled by Vanous (*The CMEA-FORTRAM Data Bank of Foreign Trade Flows and Balances of CMEA Countries, 1950-77*). Values for 1978-80 trade flows are from Vanous; price indexes for 1978-80 trade flows were calculated using price data in the 1980 *Foreign Trade Yearbook for Hungary* to update the Vanous price series after 1977.

*Trend and hypothetical imports are measured with an import elasticity from bloc markets of 1.3, the historical elasticity between 1968 and 1973, based on Vanous' value and price data.

Hungary failed to mount a successful export-promotion strategy in response to external disturbances. Except in 1974, Hungary actually lost market shares in Western markets, as a result of declining market shares in both food products and manufactured goods.

Hungary's poor export performance in these sectors can be attributed to both internal and external causes. Hungary's food exports to the European Economic Community (EEC) were concentrated on live animals and animal products, and the EEC's stricter quotas on such products beginning in 1974 were undoubtedly partly responsible for Hungary's declining market share.¹¹ Faced with exogenous downward shifts in Western demand for these products, the Hungarians shifted some of the displaced exports to bloc trade on a convertible-currency basis. The decrease in the Western market share in food is also partly attributable to supply constraints within Hungary. Starting at the end of 1974 and continuing through 1976, domestic milk production declined; and to avoid domestic shortages at existing prices, cheese exports were reduced (O'Relley, 1977, p. 365).

It is difficult to identify specific external factors to account for Hungary's declining export share of manufactured goods in Western

¹¹See Brown and Tardos (1980) for more detail on this point.

markets. There is some evidence that the particular composition of Hungarian manufactured exports, with an estimated 20 percent of the total in clothing, steel, and footwear during the 1973-77 period, made Hungary vulnerable to ad hoc protectionist measures in Western markets.¹² In addition, if Hungarian exports, like the exports of the other East European economies, are residual sources of supply in Western developed markets, the overall growth slowdown in these markets might have produced an even more dramatic slowdown in demand, with a resulting loss of market share. In the case of manufactured exports, however, the decline in Hungary's market share was probably the result of internal policy failures rather than exogenous external factors.

The Hungarians tried to minimize the effects of dramatic changes in world prices on domestic prices by increasing the use of firm and even product-specific taxes and subsidies during 1973-78. The result was a growing wedge between world and domestic relative prices that increasingly distorted domestic price signals to producers and consumers. Given their commitment to overall price stability, the authorities first wanted to minimize the effects of foreign inflation on the domestic price level. In this regard, their efforts were quite successful. For example, over 1974-77, consumer prices rose at an average annual rate of 3.6 percent, compared with an average annual rate of 1.8 percent between 1968 and 1973.¹³ Despite the acceleration, the inflation rate in Hungary remained low by international standards; furthermore, there is no evidence to suggest the existence of aggregate repressed inflation during this period.

The use of firm and product-specific taxes and subsidies to achieve domestic inflation objectives, however, can be viewed as a policy error. The authorities should have relied on a larger revaluation of the forint to neutralize the effects of foreign inflation on domestic price levels (see, for example, Portes (1977), Balassa (1982b) and Marer (1981)).

A second motivation behind the growing use of taxes and subsidies was a desire to moderate the distributional consequences of changing world relative prices on domestic producers and consumers. Changing relative prices and demand conditions on international markets necessitated a reallocation of resources between enterprises and sectors of production, which entailed distributional shifts both among producers and between producers and consumers. The Hungarian authorities moderated these shifts in accordance with their notions of

¹²See Marer (1981) for more detail on this point.

¹³These inflation rates are simple averages of annual inflation rates in consumer prices provided in Portes (1977, Table 23) and Brown and Tardos (1978, Table 1).

distributional equity and with their desire to keep changes in enterprise profitability and resource allocation within manageable political bounds. For example, the authorities reduced subsidies to or increased taxes on firms that began to make "excessive" profits from exporting under changed international market conditions. At the same time, compensation was provided to firms that began to run losses as a result of these conditions. Import subsidies were also used to limit increases in the domestic prices of imports, especially petroleum and petroleum-related products. Also, to limit increases in consumer prices, the rise in domestic producer prices was not fully transmitted to the consumption sphere, which aggravated the existing distortions between producer and consumer prices.

The growing use of taxes and subsidies reduced the usefulness of domestic prices as signals for decentralized decisions by consumers and producers. For example, subsidies on energy prices left the consumer price substantially lower than the producer price, which in turn was substantially lower than the world price, so that neither consumers nor producers had much incentive to save energy.¹⁴ The plethora of taxes and subsidies on both exports and imported inputs discouraged adjustments in export composition in response to changing foreign prices and reduced the overall incentives to export. The continued macro buoyancy of the domestic market also discouraged exports by providing an easy alternative source of demand for domestic producers.

Internal policy errors occurred at both macro and micro levels. At the macro level, the domestic authorities failed to reduce domestic absorption sufficiently to generate an exportable surplus, and their revaluation was insufficient to forgo incentive-distorting taxes and subsidies on domestic producers. At the micro level, the authorities distorted market signals, reducing the exporters' incentives. These short-run policy errors were aggravated by medium-run policy errors in investment allocation. Except for a one-year dramatic slowdown in 1976, net investment growth remained high throughout 1974-78.

On average, Hungary, like many developing countries, responded to international disturbances by increasing its share of investment in total output. Unfortunately, it continued to pursue an inward-looking import-substitution bias in its choice of investment projects despite growing concern about export performance and capabilities beginning in 1977. Centrally determined investment priorities continued to emphasize projects aimed at import substitution or at increasing bloc exports (mainly in chemicals and engineering), which required

¹⁴In 1974, the domestic producer price of petroleum in Hungary was only one-quarter of the world price. As a result of the 1976 price revisions, the Hungarian price rose to 60 percent of the world price (Balassa, 1982b).

substantial Western imports but contributed only marginally to Western exports. Hungary's manufactured exports to Western markets are provided mostly by light industry; yet light industry had low investment priority throughout the 1970s, as did the food-processing industry, another major source of export potential. As a result, light industry expanded its output by about 46 percent, and food processing expanded its output by 41 percent, both below the industrial average of 60 percent.

In contrast, the output of the chemical industry, a major investment priority, increased 116 percent. Through 1976, the chemical sector received about a fifth of all investment funds in manufacturing, more than light industry or all the engineering industries combined (Marer, 1981, p. 192). From the point of view of adjustment responses to cope with the worsening resource gap with the West, that priority was a policy error. The chemical sector is not only more energy-intensive than the industrial average but also more dependent on Western imports of raw materials and semi-manufactured products.¹⁵ At a more general level, the continued import-substitution bias in investment was a medium-term policy error that hampered an effective adjustment response.

One additional adjustment response has not been mentioned. Just as Hungary could attempt to switch to bloc sources of supplies to economize on import requirements from the West, it could also attempt to switch a larger fraction of its export trade on bloc markets to a convertible-currency basis. Hungary faced a sizable and growing resource gap in convertible currencies over the 1974-78 period. Increasing the share of bloc trade transacted in convertible currencies enabled Hungary to purchase needed imports through bloc channels above the quantities stipulated in five-year and annual trade agreements. By agreeing to pay for imports in convertible currency, the Hungarians could partially overcome supply constraints on bloc imports. Second, Hungary could obtain the convertible currency required to obtain products on Western markets that were not readily available on bloc markets. The shifting of food exports from Western to Eastern markets provided Hungary with an important source of hard-currency earnings.

By 1977, an estimated 18.7 percent of Hungary's exports to and 12.2 percent of its imports from all socialist countries (including bloc countries, Yugoslavia, and Cuba) were settled on a convertible-currency basis compared with negligible amounts in the early 1970s (Brown and

¹⁵In 1979, as Marer (1981) notes, about half of Hungary's convertible-currency imports were raw materials and semi-manufactures, of which about 47 percent were chemicals.

Tardos, 1980, p. 271). The convertible-currency surplus in bloc trade alone covered about one-third of the resource gap in Western trade, as indicated in Table 16.

Hungary's growing convertible-currency trade with socialist countries was accompanied by a growing ruble deficit. Between 1971 and 1974, Hungary ran an average surplus in ruble-denominated trade equal to \$170.0 million.¹⁶ In contrast, during 1975-78, it ran a deficit equal to \$312.0 million. Hungary's growing ruble trade deficit (mostly with the Soviet Union) reflected Soviet willingness to allow its East European partners to run up trade deficits as a way of mitigating the

Table 16
HUNGARY'S RUBLE AND NONRUBLE TRADE BALANCE,
1971-81
(Millions of dollars)

Year	Socialist Nonruble Trade ^a	Nonsocialist Nonruble Trade ^b	Total Nonruble Trade ^c	Total Ruble Trade ^d	Total Trade ^d
1971	—	—	-197	-205	-402
1972	—	—	-2	269	267
1973	—	—	176	438	614
1974	—	—	-474	178	-296
1975	462	-877	-415	-433	-848
1976	230	-655	-425	-292	-717
1977	310	-930	-620	-129	-749
1978	198	-1347	-1149	-394	-1543
1979	302	-642	-340	-374	-714
1980	576	-678	-102	—	—
1981	707	-790	-83	—	—

^a1975-79 figures calculated residually using data in column 3 on total nonruble trade balance and column 2 on nonsocialist nonruble trade balance; 1980-81 figures from WEFA, CPE Service, *Current Analysis*, March 19, 1982.

^b1975-79 figures from Various trade data; 1980-81 figures from WEFA, CPE Service, *Economic Outlook*, April 1982.

^c1971-79 figures from Marer (1981, Table 8.2); 1980-81 figures from WEFA, CPE Service, *Current Analysis*, March 19, 1982.

^d1971-79 figures from Marer (1981, Table 8.2).

¹⁶These dollar values are obtained by converting ruble-denominated trade shown in forints in the Hungarian trade statistics back into rubles and then into dollars at the official ruble/dollar rate set by the USSR. This procedure is consistent with the Hungarian methodology of converting dollar- and ruble-denominated trade service into forints.

effect of terms-of-trade losses in bloc trade beginning in 1975. In addition to the direct credits extended by the Soviet Union to finance these deficits, there is evidence that the Soviets supplied indirect assistance to Hungary and other East European economies in the form of implicit price subsidies in Soviet-East European trade.

The Soviet Union sold its energy and nonfood raw materials to East European buyers at prices below those prevailing in world markets and bought machines and consumer goods from East European sellers at prices above those in world markets. Some evidence of implicit subsidization in Soviet energy pricing was indicated in the discussion of the terms-of-trade results from bloc trade in Table 12. A more complete country-by-country analysis of the extent of Soviet implicit subsidies has recently been completed by Marrese and Vanous (1982). According to their results, Soviet implicit subsidies to Hungary increased fourfold in absolute dollar terms, from about 21 percent of total Soviet exports to Hungary in 1970-73 to about 32 percent in 1974-78 (Vanoos and Marrese, 1981, Tables 6 and 7).

Overall, the direct and indirect assistance provided to Hungary by the Soviet Union in its bloc ruble-denominated trade reduced the balance-of-payments effects of external disturbances. In addition, apparent Soviet willingness to allow Hungary to run a convertible-currency surplus in its bloc trade along with a growing ruble deficit permitted the Hungarians to cover the resource gap in Western markets with a convertible surplus in the East. This additional adjustment strategy was available only as long as Hungary's trading partners, particularly the Soviet Union, were willing to maintain growing ruble surpluses with Hungary while simultaneously incurring growing dollar trade deficits.

EXTERNAL SHOCKS, ADJUSTMENT PROBLEMS, AND POLICY RESPONSES: 1979-81

Adjustment Through Austerity

By the late 1970s, the Hungarian authorities began to realize that they could no longer rely on a passive borrowing response to external disturbances from Western markets. Western lenders were getting nervous about their increasing exposure and risk in Eastern Europe. In addition, Western loans to finance continued imports of Western goods and services had not produced the expected improvements in Hungarian productivity or the expected increases in output.

As early as 1976, there were signs of concern about the wisdom and efficacy of the adjustment strategies being pursued. Recognition of the increasing microeconomic distortions caused by growing gaps between domestic and world relative prices led to some upward revisions of producer prices and some reduction in consumer subsidies at the beginning of 1976. Substantial divergences between domestic and world relative prices persisted, however, as did the necessary enterprise-by-enterprise and product-by-product taxes and subsidies. A more important indicator of a change in policy direction was the increasing emphasis on the need for policies to improve export performance in 1977 and 1978. Despite increased concern over exports, however, there was no marked improvement in export growth, and Hungary's Western market share continued to decline through 1978.

1979 was the turning point in Hungary's adjustment strategy. Confronted with an estimated 50 percent increase in its outstanding gross debt between 1976 and 1978, and with the rising servicing burden associated with this debt, the Hungarian authorities introduced several austerity measures aimed at reducing the resource gap in Western trade.¹⁷ The austerity program marked the transition from reliance on external borrowing to reliance on macroeconomic slowdown. This transition has persisted to the present time and is embodied in the medium-term development strategy outlined in the 1981-85 plan.

The austerity measures have aimed at increasing the excess of domestic output over domestic absorption, or, equivalently, increasing the excess of domestic saving over domestic investment. The effects of these measures on the growth of domestic output, domestic absorption, and the resource gap in Western trade are apparent in Table 10. At a macro level, austerity policies have been designed to cut domestic absorption by slashing net investment demand and reducing the rate of growth of consumption. New investment has been cut by administrative restrictions on investment spending, the bulk of which has remained under the authorities' direct control throughout the post-reform period. The rate of growth of consumption has been slowed by tighter restrictions on the rate of growth of nominal incomes in state-controlled industry and by large consumer price increases that have reduced consumers' real purchasing power.

As Table 10 indicates, investment spending has suffered a disproportionate share of the slowdown in domestic absorption. This reflects the authorities' goal of insulating consumption levels from declines

¹⁷This estimate of the increase in gross debt between 1976 and 1978 is based on the gross-debt series of Wharton Economic Forecasting Associates (WEFA), CPE Service. The CIA gross-debt series, which differs from the WEFA series in terms of method of calculation and coverage (including an estimate of all suppliers' credits outside banking channels), shows an 85 percent increase in gross debt between 1976 and 1978 (CIA, 1980).

that might generate political dissatisfaction and unrest. Viewed from a long-run perspective, the concentration of absorption cutbacks on investment is consistent with Hungary's commitment to consumer satisfaction as a fundamental component of its underlying social contract. However, consumption has not been completely spared under the austerity regime; consumption growth has slowed since 1979 relative to its performance in 1971-78. The 1981-85 plan figures suggest that a continuation of this trend is likely through 1985. Consumption is slated to increase only 7 to 9 percent; increases during the previous two plan periods were two to three times as large.

Austerity measures to slow the growth of domestic absorption have been accompanied by a slowdown in the growth of domestic output. Because output is largely supply- rather than demand-determined in the Hungarian economy, as in the other East European economies, there is no automatic link between a slowdown in domestic absorption and a slowdown in domestic output.

Three factors have probably played a role in the domestic-output slowdown, although in the absence of a fully specified and estimated model of the Hungarian economy, it is impossible to assess their relative importance. First, steep cuts in net investment have had both demand- and supply-side effects. On the supply side, reductions in investment have reduced additions to capacity, thereby reducing sustainable growth rates of domestic output. Second, behind the absorption slowdown at the macro level lies a reallocation of demand and resources at the micro level. As the experience from numerous stabilization efforts in many developing countries suggests, this reallocation takes time and usually involves some slowdown in aggregate output growth, at least in the short run, as slowdowns in some enterprises and sectors outweigh increases in others. Finally, the slowdown in output growth is partly the result of continued import-substitution efforts. The growing scarcity of convertible foreign exchange available for import purchases after debt-servicing requirements have been met has led to growing restrictions on imports from Western markets. Because most such imports are inputs to domestic production, their scarcity has led to a decline in domestic-output growth. Compulsory import-substitution, in the form of sharp administrative cuts in Western imports, became an increasingly important component of the austerity program during 1981 and 1982, in response to tightening credit-market conditions.

In 1979, there was a remarkable improvement in the hard-currency trade gap, which declined by an estimated 70 percent, reflecting both a sharp acceleration in exports to and a sharp decline in imports from the West. Gross debt continued to increase in 1979, although considerably more slowly than in the previous two years. This further increase,

along with rising nominal interest rates and growing repayment obligations, reflecting the maturity structure of the outstanding debt, produced a continued increase in the debt-servicing burden faced by the Hungarian economy in 1980 and 1981. According to recent estimates, Hungary's hard-currency debt-service ratio—measured as the ratio between interest and principal repayments due in convertible-currency and hard-currency Western merchandise exports—increased from an average of 0.40 between 1978 and 1979 to an average of 0.50 between 1980 and 1981.¹⁸

The extent of the burden on domestic resources associated with debt-servicing requirements of this magnitude is suggested by looking at them as a share of gross domestic product. Table 17 presents estimates which indicate that by 1980-81 the debt-servicing burden in Hungary was substantial relative to its current domestic output or to annual increments in this output. In terms of the absorption model, these findings indicate that by 1980, the excess of domestic output over domestic absorption needed to service Hungary's debt was a significant burden on domestic resource use. In light of projected large debt-servicing requirements over the next few years, this burden is likely to remain near 1980-81 levels throughout the 1981-85 plan period.

Hungarian efforts to reduce the resource gap with the West and to service the existing stock of convertible-currency debt since 1979 have been hampered by further external shocks. A marked slowdown in export demand in Western markets has made expansion of Hungarian exports difficult, and international credit-market conditions have worsened. The deepening recession that developed in the advanced market economies after the 1979-80 oil shock and the anti-inflationary policies that followed slowed world trade considerably after 1980. The slowdown has been particularly dramatic in the markets of the Western industrial economies, which in 1980 accounted for about 81 percent of Hungary's western imports (in value terms).

To reduce its resource gap with the West, Hungary must reduce domestic absorption below output and convert the resources saved into a reduction in its Western trade deficit measured in convertible currency. Deteriorating Western export markets have made the second task more difficult by limiting the prospects for reducing the trade deficit through an expansion of exports. Given developing sales constraints in Western markets, domestic resources freed up for export by

¹⁸These estimates are calculated from figures on interest payments and debt repayments provided by WEFA, CPE Service. They differ from debt-service ratios calculated by comparing debt-service requirements to the sum of hard-currency Western exports and the net balance in invisibles. The latter procedure yields an average 1980-81 debt-service ratio of 0.42.

Table 17
THE BURDEN OF HUNGARY'S DEBT-SERVICE REQUIREMENTS,
1980-81

Item	1980-81 Average (percent)
Hard-currency, Western exports as a share of GNP	15.3
Debt service as a share of hard-currency Western exports	50.0
Debt service as a share of GNP (product of first two items above)	7.7
Share of actual increment in GNP due in debt-service payments (average 1980-81 estimated growth rate in GNP - 0.9%)	855.0
Share of planned increment in GNP due in debt-service payments (planned growth rate in GNP for 1981-85 - 2.9%)	266.0

SOURCE: Calculations based on data from WEFA, CPE Service.

austerity measures have not been easily converted into a reduction in the Western trade deficit.

Hungary might have tried to get around these external constraints by price reductions to promote its export sales. Such a strategy, however, would have entailed a terms-of-trade loss, and an even larger volume of domestic savings would have been required to realize the necessary reduction in the deficit. Although not conclusive, the evidence in Table 18 on Hungary's terms of trade in Western markets over 1979-82 suggests that the Hungarians have not actively pursued this strategy, perhaps because they believe that Western demand for their exports is price-inelastic. Since a deterioration in 1980 that wiped out gains realized in 1979, Hungary's terms of trade with the West have actually improved by about 1.5 percent.

Faced with dwindling export demand in the West, the Hungarians have apparently chosen to rely on the import savings generated by domestic austerity measures and compulsory import substitution through direct import cutbacks. In 1979, austerity measures within Hungary and favorable Western market conditions combined to produce an increase of about 17 percent in the volume of exports. Hungarian imports from the West actually declined in real terms by an estimated 3.6 percent. In 1980 and 1981, the trend continued, with real imports falling an estimated 4.3 percent and 3.0 percent, respectively.

Table 18

HUNGARY'S TERMS OF TRADE WITH WESTERN AND BLOCK MARKETS

Markets	1970	1974	1978	1979	1980	1981	Mid-1982
Western markets	100	83.8	81.6	86.6	81.4	83.1	82.6
Bloc markets	100	96.1	—	81.7	82.5	79.3	76.3

SOURCE: 1970-78 figures calculated from Vanous trade data; 1979-82 figures are estimates from WEFA, CPE Service.

Preliminary results through mid-1982 suggest a continuation of this trend as Hungarian planners responded to an unforeseen contraction in short-term credits by making emergency cutbacks in Western imports. Real exports to the West increased by only an estimated 4.2 percent in 1980 and then actually declined an estimated 6 percent in 1981 (WEFA, CPE Service estimates).

There is not enough information available to ascertain how much of the disappointing export growth in the West since 1980 resulted from demand effects in Western markets and how much resulted from Hungarian policy choices. The only conclusion warranted by the available information is that the economic slowdown in the West beginning in 1980 has made the adjustment task more difficult for Hungary, as it has for all the developing countries and the other East European economies.

A second factor that has hampered Hungary's adjustment strategy since 1979 has been a worsening of international credit-market conditions. Both nominal and real interest rates on international loans began to rise in 1979, and this increase continued through mid-1982, when rates began to fall. Nearly all of Hungary's hard-currency debt (approximately 98 percent in 1978-79) is in the form of commercial debt, most of which carries variable interest rates, so the rise in market rates increased Hungary's debt-service requirements in nominal terms and the real burden as well.

In addition to rising interest charges, since the spring of 1981 Hungary has been subjected to an increasingly severe credit squeeze, which has not only slowed the extension of new medium- and long-term debt, but has also reduced Hungary's ability to roll over its short-term debt, which by the end of 1981 accounted for approximately one-third of its convertible-currency debt. Because of unexpected and severe credit-market constraints, Hungary has been forced to adjust its resource gap more rapidly than planned to meet the balance-of-payments constraint

imposed by the state of its capital account. The situation was particularly difficult during the first half of 1982, when Hungarian reserves (convertible currency plus gold valued at \$226/ounce) declined by nearly \$1.5 billion (WEFA, CPE Service *Current Analysis*, September 1982).

Hungary's economic situation has also been made more difficult by external shocks in its Eastern trade. The most important of these has been the continued sharp decline in Hungary's terms of trade in bloc markets, the result of the lagged effects of earlier world market price adjustments and of the 1979-80 world oil price increase that has continued to drive up bloc energy prices. As indicated in Table 18, Hungary's bloc terms of trade deteriorated by an estimated 7.5 percent between 1980 and 1982, after rising by an estimated 1 percent in 1979. During 1980-82, the terms of trade with the Soviet Union, Hungary's major energy supplier within the bloc, deteriorated by 11.1 percent, largely as a consequence of rising Soviet energy prices. The most likely outlook is a continuation of the adverse trend in Hungary's bloc terms of trade through 1985, as bloc energy prices adjust to reflect the near tripling of energy prices in world markets.

The terms-of-trade losses in bloc trade have constituted a further real income loss for the Hungarian economy and have increased the difficulty of reducing the ruble trade deficit, in accordance with stated Soviet intentions. After falling by an estimated 11 percent in 1979, the ruble deficit increased by an estimated 50 percent in 1980 and then fell again by about 20 percent in 1981 (WEFA, CPE Service, *Current Analysis*, March 19, 1982). With Hungary's bloc import prices rising more rapidly than its bloc export prices, the reduction in the nominal deficit, given deteriorating terms of trade, required a greater excess of domestic output over domestic absorption than would have been necessary had the terms of trade remained constant over the period.

The Hungarians have continued to encounter other supply constraints in bloc trade, particularly in energy. Soviet exports of oil and oil products to bloc countries, including Hungary, appear to have peaked in 1979-80 and at best have remained unchanged through mid-1982. Recent Western assessments and Soviet policy statements suggest that no increase in Soviet oil exports to bloc countries is likely through 1985. Of course, as Soviet energy prices rise to approach currently falling energy prices on world markets, a switch to world market sources of supply becomes less costly to the Hungarian economy.

Repeated interruptions in deliveries of Polish raw materials since 1980 have also had an adverse effect in Hungary. According to recent reports, interruptions in the deliveries of coal, coke, sulfur, and copper have caused temporary shortfalls in raw-material inputs, with consequent disruptions in production.

Hungary has continued to run a large dollar trade surplus with its socialist trading partners (including bloc countries, Yugoslavia, and Cuba). In 1979, this surplus offset an estimated 47 percent of Hungary's dollar trade deficit with the West; the comparable figures for 1980 and 1981 are 85 percent and 89 percent. Should the Soviets act in accordance with their stated intentions to force the Hungarians to reduce their ruble deficit, Hungary's ability to run a dollar trade surplus with the East will be jeopardized. One way for the Soviets to realize their intentions is to compel the Hungarians to convert "hard" exports, mainly food, from a convertible-currency basis to a ruble basis, simultaneously reducing Hungary's ruble deficit and its dollar surplus. Without net dollar earnings from the East to finance a portion of its Western resource gap and in the presence of credit-market restrictions limiting the financing of this gap in the West, Hungary will be forced to sustain larger and more rapid reductions in its Western trade deficit, requiring larger and more rapid increases in the excess of domestic output over domestic absorption.

Adjustment Through Reform

In July 1979, Hungarian authorities introduced very large price adjustments, increasing food prices by 20 percent and fuel and energy prices by 34 percent. These changes indicated a basic decision by the Hungarian authorities to increase the role of prices and the market in the adjustment process. Important features of the 1968 economic reform had been undermined by the growing insulation of domestic prices from world prices and the growing use of ad hoc, enterprise-specific intervention in microeconomic decisionmaking. As economic reforms were slowed or reversed between 1974 and 1978, the planners relied more on direct-control methods at both the micro and macro levels. By 1979, it was apparent that these methods were not adequate. Even when partially successful, as they were in promoting the 1976 macroeconomic slowdown, direct-control methods entailed an obvious efficiency loss, because the system did not promote an efficient allocation of scarce goods and resources.

As the economy entered a prolonged period of macroeconomic austerity, efficiency became increasingly important. Large increases in the capital stock were no longer a feasible source of domestic growth, nor were increases in labor supply, given Hungary's demographic characteristics. Economic improvements depended on a reaffirmation of the basic features of the 1968 reform—the use of rational domestic prices and profitability considerations to guide decentralized enterprise decisionmaking.

Political momentum that began to gather behind the need for further economic reform as early as 1977 culminated in a new set of reform measures in January 1980. A major component was the introduction of rules for "competitive" pricing in the industrial sector. These rules were designed to align domestic producer prices with world market prices, equating the domestic producer prices of raw materials, fuels, and basic intermediates to tariff-inclusive import prices paid in convertible-currency trade, multiplied by the commercial exchange rate. After the imposition of the new rules, the average prices of raw materials and basic intermediates increased by 30 percent and energy prices by 57 percent. Movements in these prices have since been guided by changes in convertible-currency prices and in the commercial exchange rate.

The new rules link the prices of many exported manufactured goods to world market prices plus an allowable profit margin. The allowable profit margin for firms that export more than 5 percent of their output in convertible-currency trade—accounting for about two-thirds of Hungary's industrial production—was determined by estimating the domestic cost of earning foreign exchange through exporting. These firms have not been allowed to increase their domestic prices to an extent greater than the rise in their export prices, and the allowable profit margin provides a further constraint on domestic price setting. For firms exporting less than 5 percent of their output in convertible currency, an average profit margin was set in 1980; since then, changes in prices have been linked to changes in domestic costs. The basic objective of these rules was to provide enterprises with meaningful price signals in their production and exporting decisions. To keep divergences between domestic and foreign prices from thwarting export incentives, the new rules prescribed that if the profitability of exports declines as a result of a decline in export prices, then domestic prices must fall as well, which usually entails diminished domestic profitability. Thus, the profitability of exports has become a much more important factor in the reasoning of executives in charge of enterprises producing manufactured industrial goods.

For nontraded items, such as transportation and communication services, the new pricing rules link prices to production costs, which are in turn influenced to a large extent by world market conditions. Thus, the distortions inherent in such a cost-pricing principle are limited. Finally, agricultural prices are not set according to either simple world market prices or domestic costs; rather, they reflect a complicated set of domestic priorities, the most important of which are equity and promotion of agricultural exports.

Pricing reforms have also affected the structure and composition of consumer prices. One of the basic objectives of the reforms was to reduce the discrepancies between the consumer and producer price structures that had developed between 1974 and 1978. Another was to raise the overall level of consumer prices, eliminating the producers' excess. This excess had caused several undesirable consequences during 1974-78, including the necessity of subsidizing a large share of exports that were also sold to domestic consumers and of importing goods to satisfy consumer demand at subsidized consumer prices (Marer, 1981, p. 196). Under the new pricing reforms, the relative price structure of consumer goods was brought into line with that of producer goods by setting uniform sales taxes on nonluxury goods and by linking the before-tax prices of such goods to relative production costs, calculated according to domestic agricultural prices and "competitive" producer prices. Subsidies on many consumer goods were sharply reduced or eliminated, resulting in an acceleration of the rate of increase in consumer prices, which climbed from an average of 4.5 percent between 1975 and 1978 to 8.9 percent in 1979 and 9.1 percent in 1980, before falling to 4.6 percent in 1981 (*IMF, International Financial Statistics*, July 1982).

Profitability has been reaffirmed as the normative indicator according to which enterprise decisions are made and evaluated. Profitability serves as the success criterion for enterprises, and incentives for efficient decisionmaking have been strengthened by linking the remuneration of management and workers to enterprise profitability. However, progressive taxes still prevent interfirm variations in profits from producing socially undesirable inequalities in worker income. Finally, to provide the competitive environment required for prices and profitability to serve as reasonable guides to efficiency, several horizontal trusts and large firms have been broken up since 1980, and 80 or 90 new smaller firms have been created in their places (Kornai, 1982, p. 19).

It is too early to assess the effects of the 1980 reforms on enterprise behavior in the state sector. Indeed, recent accounts differ in their evaluation. For example, Kornai (1982) argues that the incentive effects of the reforms have been weakened by the continued ability of state-sector firms to bargain for subsidies to cover their losses. In principle, the new reforms called for the use of "normative" regulators, meaning taxes and subsidies that were uniform, predetermined in the reform rules, and not modifiable through enterprise bargaining. Changes in enterprise profitability should therefore depend upon changes in prices; and because the price adjustments have been substantial, the authorities expected greater inequality in enterprise profitabilities.

The problem inherent in this reform design is that under the new system, large-scale Hungarian industry was faced with sharp declines in profitability, and several large firms actually confronted bankruptcy. According to Kornai's evidence, the price reforms decreased profitability in 85 percent of Hungary's industrial firms and in all major branches of industry except mining. Enterprise and political pressures on the authorities to ease the burden of adjustment on the industrial sector were substantial, and Kornai's evidence suggests that the authorities largely succumbed to these pressures, thereby slowing the pace of reform. By 1982, the declines in profitability at the enterprise and branch levels had been moderated or reversed by compensating tax and subsidy measures. Contrary to reform intentions, greater differentiation in enterprise profitability had not occurred, and managers and workers were rewarded on the basis of compensated profitability rather than "actual or original" profitability calculated at reform prices.

Despite the continued use of enterprise-specific subsidies, there is evidence that the reforms have had some positive effects. For example, Bauer (1982) argues that the new Hungarian system, with no obligatory output targets and with materials available at the enterprise level, gives enterprise managers substantial scope for diversification. Firms have used this discretion to move into new lines of activity or new markets in response to changing prices, and this has contributed to the adaptability of the economy. The effects have been particularly noteworthy in consumer-goods markets, such as food, household chemicals, and other branches of light industry. A recent study by Crane¹⁹ presents evidence that the reforms have strengthened managerial incentives for profitability. According to Crane's enterprise respondents, the primary objective of Hungarian managers is now to avoid losses, because losses eliminate managerial bonuses and carry the threat of managerial dismissal. As a result, managers have an incentive to avoid unprofitable lines of production and to economize on costly inputs, including imports.

Firm managers have apparently sought out new export markets in the West in response to improving incentives. For example, throughout most of the 1970s, Hungary generally exported finished goods to the East and raw materials, food products, and other semiprocessed goods to the West. Despite the slowdown in Western markets, exports of Hungarian finished goods to the West have increased sharply, growing by an estimated 41 percent in volume terms during the first half of 1982 (WEFA, CPE Service, *Current Analysis*, September 22, 1982).

¹⁹Keith Crane, "Systemic Differences in Foreign Trade: A Key to Differences in the Cost of Polish and Hungarian Hard Currency Account Adjustment," unpublished paper, The Rand Corporation, 1983.

Finally, continued improvements in productivity have indicated a high degree of flexibility and adaptability in the Hungarian economy. Since 1974, industrial employment has been falling steadily, but output has continued to grow because of increases in labor productivity. During the first six months of 1982, productivity per worker increased by 3.9 percent and productivity per man-hour by 8.3 percent, on top of already impressive gains of 5.0 and 5.2 percent in 1980 and 1981 (WEFA, CPE Service, *Current Analysis*, September 28, 1982).

In the medium to long run, the success of the reforms depends critically on improvements in the investment allocation process. At least formally, the reforms called for an assessment of the profitability of competing investment projects on the basis of undistorted prices. If this principle is actually adhered to in practice, the capital resources in unprofitable enterprises and sectors will eventually decline and those in profitable uses will rise. A promising sign is the increasing priority of export performance in Western markets as a factor influencing the allocation of investment. If the current retrenchment leads to selective cutbacks and promotion rather than to an across-the-board scaling down of investment in progress, this too would be a good sign.

A worrisome point is the growing number of new investment starts in 1980-81 relative to 1979, despite the overall slowdown of investment. Moreover, enterprises tended to spend their internal investment resources on their own projects as soon as possible. Because the microeconomic inefficiencies in investment allocation are inextricably linked to the softness of enterprise budget constraints, any continued softness of these constraints in the form of enterprise subsidies or tax breaks does not bode well for investment decisionmaking over the medium run.

The discussion has thus far focused on reforms in the state industrial sector of the Hungarian economy. Yet in 1980-82 many reforms were also aimed at the nonstate sector, which includes the cooperative sector, the formal or legal private sector, and the informal or illegal private sector in industry and agriculture. These reforms included the introduction of new legal forms that allow private individuals to enter into different types of cooperative activity with the state or cooperative industrial sectors, and a relaxation of restrictions on the expansion of both cooperatives and private producers into new lines of industrial production. One objective of these reforms was to create a supportive, formal legal environment to encourage private sector activities judged to be useful. Another was to encourage small-scale industrial activities that had shown themselves to be more productive and more flexible than larger-scale state enterprises, especially in responding to export and consumer markets (see Balassa, 1982b, and Kornai, 1982, for evidence).

The 1980-82 reforms sought to further improve the incentives and production prospects for private, small-scale agriculture by a threefold increase in the threshold of taxable income for small farmers, a greater investment allocation to this sector, and the lease of land not suitable for large-scale farming by state farms and cooperatives for private-plot use.

The reforms aimed at the nonstate sector have important implications for the adjustment capabilities of the Hungarian economy. First, the nonstate sphere underlies Hungary's continued ability to adjust without a decline in consumption. Particularly in food supplies, but also in housing construction, transportation, intellectual services, personal services, and wood products, the nonstate sector covers an important share of consumer demand. Small-scale agriculture accounts for over four-fifths of the production of early vegetables, two-thirds of the production of eggs, and over one-half of the production of pigs, poultry, wine grapes, fruits, and vegetables (Palovic, 1981, cited in Balassa, 1982b). Similarly, in 1979, an estimated 42 percent of all housing units were built by private-sector activity (Kornai, 1982).

The nonstate sector is also important because of its noncyclical behavior. It is considerably less capital-intensive and import-intensive than the state industrial sector, so it is protected from the supply-dampening effects of the investment and import slowdowns necessitated by Western balance-of-payments difficulties. As a consequence, its activities are a built-in stabilizer during periods of macroeconomic austerity, because it can cover gaps in consumption demand, especially food supplies.

Over the medium run, the nonstate sector is important because its rules of behavior and incentive system promote the kind of economic efficiency that is difficult to realize in the state sector. The budget constraint in the industrial cooperative sector tends to be harder than in the industrial state sector, and in the private sector, both in industry and in agriculture, it is hardest of all. This means that uninsured by the state socialization of risk and uncompensated by offsetting taxes and subsidies, decisionmakers in the nonstate sector are guided by price signals. These decisionmakers have the advantages of greater flexibility in deciding on production, pricing, labor, and investment decisions than their counterparts in the state sector, but at much greater risk. As a result of its different incentive systems, except where the technological advantages of large-scale and capital intensity are paramount, the nonstate sector can be expected to make more efficient economic decisions than the state sector. Therefore, the 1980-82 reform measures, aimed at the expansion of the nonstate sector over the medium run, should improve the overall growth prospects of the Hungarian economy even under continued austerity.

Finally, the expansion of the nonstate sector can be expected to ease Hungary's adjustment process by providing a mechanism for the continued mobilization of labor effort. Employment and income-earning opportunities in this sector have increased the total labor effort of the population, as indicated by the substantial number of overtime hours people are willing to put into such activities. Further, employment opportunities in the labor-intensive nonstate sector provide Hungary with an employment buffer should investment reductions or the reallocation of labor resources in accordance with efficiency indicators reduce job opportunities in the state sector. One of the factors repeatedly slowing the process of meaningful economic reform in the state sector since 1968 has been the authorities' continued concern about the maintenance of full employment. The steady expansion of job opportunities in the nonstate sector would reduce the apparent conflict between the goals of full employment and greater efficiency in the state sector.

ADJUSTMENT PROBLEMS AND CAPABILITIES: A FORWARD LOOK

Despite three years of economic austerity and two years of additional economic reforms, the severe adjustment problem faced by the Hungarian economy is likely to persist through 1985. The magnitude of the adjustment task is suggested by recent indicators of Hungarian indebtedness with the West. At the end of 1981, Hungary's debt-service ratio and debt-GNP ratio were the second highest in Eastern Europe (next to those of Poland), and its per capita debt was the highest (WEFA, CPE Service, *Current Analysis*, April 27, 1982). In 1981, despite continued austerity, the Hungarian trade deficit with Western countries was still \$788 million, and preliminary figures indicate a deficit of about \$343 million for 1982.²⁰ As a result of offsetting dollar surpluses in bloc trade, Hungary's overall dollar deficit in 1981 was only an estimated \$82 million, down dramatically from an estimated \$1149 million in 1978; and preliminary figures indicate that, largely as a result of a continued bloc trade dollar surplus, Hungary realized an overall hard-currency surplus of \$461 million by the end of 1982.

In the next few years, the magnitude of Hungary's adjustment task will depend on several external factors, the most important of which are external credit-market conditions, export demand conditions in

²⁰Trade balances are calculated from FOB exports and CIF imports.

Western markets, the continued deterioration in Hungary's terms of trade with the Soviet Union (down by a projected 32 percent between 1980 and 1985 (Marrese and Vanous, 1982)), and Soviet willingness to allow Hungary to maintain its dollar surplus and ruble deficit in bloc trade. Given the dramatic changes in international capital-market conditions during the past two years, the unanticipated severity of the recession in the West, and uncertainty about Soviet intentions with regard to Hungary's bloc trade surplus, it is difficult to predict the course of these external factors. Even under fairly optimistic assumptions, however, Hungary's adjustment task is substantial.

Preliminary indicators suggest that Hungary continued to meet this task through a combination of austerity and reform in 1982-83. Growth rates of national output remained depressed, substantially below the 5.8 percent rate realized in 1970-78 and close to the 1.4 percent rate realized in 1979-82.²¹ At least through the end of 1983, growth rates of domestic absorption remained negative, indicating a further drop in its level relative to the 1978 peak. In 1982, domestic absorption was about 8 percent lower than in 1978. The prospects for possible gains in domestic absorption levels through the rest of the plan period remain strictly constrained by capital-account constraints on import capabilities. The burden of cutbacks will continue to fall disproportionately on investment levels that have already been drastically cut, with the level of gross investment estimated at 26 percent below its 1978 peak by the end of 1983. So far, consumption has been protected from cutbacks, although its rate of growth has dropped sharply relative to 1970-78 standards. Preliminary indicators for 1983 suggest a decline in consumption of about 0.2 percent. Such a decline is consistent with Hungary's 1983 fiscal program, which called for a 1.5 to 2 percent decline in real incomes. Given Hungary's long-term commitment to improving consumption standards, however, it is unlikely that consumption levels will be allowed to fall much as a result of continued austerity. New policy measures in 1982 and 1983—including more active use of the exchange rate to encourage exports and reduce imports and further price adjustments—indicate that the Hungarians will continue to try to adjust by reform as well as by austerity. Should external conditions necessitate an excessively large, rapid dose of austerity, however, reform will be threatened. If Hungary is forced to compress Western imports too rapidly, before it has sufficient time to develop efficient alternative sources of supply, the result will be a sharp contraction in domestic output levels, production bottlenecks, and

²¹This figure and the remaining data in this paragraph are taken from WEFA, CPE Service, *Current Analysis*, September 2, 1983.

shortages. The most likely Hungarian policy response to increasing shortages would be the strengthening of administrative measures and the weakening of price incentives. Many developing countries confronted with sharp contractions in their import capabilities have reacted with such measures. Ironically, the imposition of administrative measures to deal with a short-term balance-of-trade crisis undermines the incentives required for medium-run adjustment. In addition, the restrictions on investment activity that usually accompany such a crisis make the structural changes in output composition required over the medium run all the more difficult to achieve.

An excessively severe domestic contraction necessitated by external credit-market conditions could weaken reform prospects in Hungary in a second and perhaps more fundamental way: Reforms are politically risky; they are adopted for economic reasons, but they are reversed by political difficulties. The current reforms threaten many of the vested-interest groups on which the stability of the Kadar regime depends. The managers of large state-sector enterprises are threatened by relative prices that jeopardize enterprise profitability and managerial bonuses and by cutbacks in investment that hamper managerial growth objectives. The industrial proletariat is threatened by increases in consumer prices, by sectoral adjustments that jeopardize job security, and by the possibility of a deterioration in their relative earnings position as a result of the encouragement of the nonstate sector.

The Hungarian authorities have been able to rally domestic political forces in support of the reform because of the reserve of legitimacy that the Kadar regime has built over the past years, because they have convinced the population that Hungary has few other alternatives, because they have been able and willing to prevent politically destabilizing reductions in the quantity and quality of consumption goods, and because they have allowed a wider scope for individualism and private action in the nonstate sector. But should external conditions plunge the Hungarian economy into a contraction that necessitates a sustained drop in consumption levels or that interferes with supply flows to the growing nonstate sector, the ability of the Kadar regime to maintain internal support for the reforms would be threatened.

Finally, the prospects for reform continue to depend on the Soviet Union's attitude. So far, the new Soviet leadership has expressed support for Hungary's reform course, and Kadar in turn has stressed that reforms will continue to be gradual and moderate, thereby allaying Soviet fears about their pace and political consequences. Should the Soviets withdraw their support in the future—for example, because of anxieties about the political reliability of a post-Kadar leadership, or

because of a change in the constellation of political forces in the Kremlin—the continuation of the reform process is unlikely.

If either internal or external forces require a reversal of reforms, such as occurred during the mid-1970s, the medium-term adjustment prospects of the Hungarian economy would suffer. Under such circumstances, there is little likelihood that growth rates would rise much above their current depressed levels, even after the current capital-account constraints on growth have been eliminated by a sustained period of debt repayment.

III. ECONOMIC ADJUSTMENT IN ROMANIA

CONDITIONS AT THE ONSET OF EXTERNAL ECONOMIC DISTURBANCES

On the eve of the international economic disturbances that began in 1973, the Romanian economy conformed to the traditional Stalinist model in both its institutions and its overall development strategy. Institutionally, the Romanian economy exemplified all of the major features of Stalinist central planning. Both long-term and annual production decisions were guided by plans that set quantitative output targets by which enterprise success was evaluated. Material output allocations were centrally determined by the bureaucratic planning hierarchy. Prices were set administratively and left unchanged for long periods of time. Enterprise and product-specific taxes and subsidies insulated domestic retail prices from domestic producer prices and both kinds of domestic prices from foreign prices. Foreign-trade decisions, as well as decisions about the overall level and sectoral allocation of investment, were centrally determined.

Agriculture, like industry, was overwhelmingly socialist and centralized in character. Between 1949 and 1962, a collectivization program left over 90 percent of all agricultural land in the hands of either state or collective farms. All state farms and collectives were connected to the centralized Ministry of Agriculture, which was responsible for planning and managing agricultural activities. The state remained the main purchaser, processor, and distributor of marketed agricultural goods. Even the output of industrial production on private plots was included in state planning, and local agricultural agents negotiated contracts with individual producers to stimulate production in planned directions. Central control over agriculture enabled the state to direct agricultural production to support its basic economic goals.

These goals reflected the Stalinist development strategy from which they were derived. The Romanian leadership was committed to a postwar program of rapid economic growth emphasizing industrialization, based on the rapid transfer of agricultural labor reserves to industry and on a major investment effort. Investment grew more rapidly in Romania than in the other bloc countries throughout most of the postwar period, and by 1974, Romania's investment effort, expressed as a share of net material product, was the highest in the bloc and

perhaps in the world (see Table 8). In both industry and agriculture, this massive investment effort was sustained by a policy of real income control that suppressed consumption growth and kept levels low. The leadership defended the consumption sacrifices of its growth strategy by focusing on the future gains in consumption to be won by its investment and industrialization efforts.

An inward-looking, import-substitution bias dominated Romanian investment and development decisions. The choice of industrialization objectives was reflected in the Romanian trade strategy that evolved during 1960-73, involving the import of raw materials and semiprocessed goods to satisfy the growing input needs of Romania's industrial base, and the export of agricultural goods, food products, and other manufactures. Overall trade dependence remained low, compared with that of countries of similar development level, reflecting Romania's stated preference for self-sufficiency and autarky.¹ Romania also tried to reduce the extent of its dependence on foreign supplies by diversifying their sources. This strategy was reflected in the dramatic decline in the share of bloc trade in total Romanian trade that began in 1960 and persisted through 1974. Clearly, this trend also conformed to Romania's quest for greater independence in bloc affairs and in foreign-policy formulation.

Consistent with the Stalinist development model, agriculture was accorded a secondary position throughout most of the postwar period. Agriculture's share in investment was consistently lower than its share in social product until 1970, when agricultural investment received new emphasis.² In addition, the preferential treatment of industry in investment policy was supported by large wage differentials between industry and agriculture and by domestic pricing policies that favored industrial over agricultural goods.³

The 1971-75 plan period marked the beginning of a new phase in Romania's development effort that reaffirmed certain features of the traditional Stalinist model and moderated others. Following a period of uncertainty after Ceausescu's ascension to power and a brief but abortive flirtation with some decentralizing economic reforms of the Hungarian variety, Romania embarked upon a major "remobilization" effort to reverse the growth slowdowns in industry and agriculture

¹For evidence on the self-sufficiency reflected in Romania's trade and development patterns, see Montias (1967) and Jackson (1981).

²See Cole (1981) for data on agriculture's share in social product and investment between 1950 and 1975.

³As a result of these policies, estimated real income in money and "kind" per active peasant fell from 77.7 percent of real wages of state employees in 1955 to only 47.2 percent in 1970 (Jackson, 1977, Table 32).

experienced during the 1966-70 plan. This effort rested on an increase in the already substantial investment program and renewed pressure on all levels of the planning and enterprise hierarchy to achieve increased growth rates. The traditional institutions of production planning and incentives in industry, foreign trade, and investment allocation were strengthened, and within these institutions, a "hortatory" campaign unleashed by the leadership was designed to stimulate greater effort.

This campaign was accompanied by some real policy changes in agriculture in response to its exceptionally poor performance in 1970, when net output fell below pre-collectivization levels. The new measures accelerated agricultural growth and improved agricultural incentives by adjusting rules and conditions for calculating incomes in collective agriculture to reduce rural-urban earnings differentials. Pensions, sick leave, and other social benefits were improved, and guaranteed minimum incomes were introduced for collective farm workers. Finally, private agricultural production was stimulated by policies of selective price increases and income-tax reductions. These policies improved agricultural earnings relative to industrial earnings, although the gap between the two remained substantial.

From the perspective of its potential adjustment capabilities to the disturbances of the 1970s, the Romanian economy had several disadvantages. First, because of its traditional planning structure, it lacked the flexibility to respond quickly to changing relative price signals and demand conditions on external markets. There were no automatic incentives in the system to encourage the reorientation of production, consumption, investment, and trade decisions in response to changing world prices.

Second, the import-substitution bias inherent in Romania's development strategy had increased Romania's dependence on imports of energy and raw materials and her reliance on exports of manufactured goods and agricultural products in Western markets. The result was a persistent deficit in Romania's trade with the developed market economies, followed by a deterioration in export prospects due to the slowdown in these economies in the 1970s (see Table 19).

Third, the neglect of the agricultural sector during most of the postwar period left Romania with an agricultural base characterized by low yields and low productivity and subject to wide swings in output levels due to changing climatic conditions. Romanian agricultural output per capita was the lowest in Eastern Europe. Disappointing output growth during 1966-70, combined with continued poor productivity growth, meant that food exports—which accounted for about 30 percent of Romania's hard-currency exports to the West between 1969 and 1974—were achieved at the expense of domestic consumption levels.

Table 19
ROMANIA'S BALANCE OF TRADE, BY CURRENCY AND COUNTRY CLASSIFICATIONS, 1969-82
(Dollar trade in millions of dollars; ruble trade in millions of rubles)

Item	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982
Total dollar trade*														
Total exports	663	776	908	1149	1804	2762	2839	3463	3702	4072	5508	6574	7281	6235
Total imports	863	903	971	1265	1846	3131	2950	3327	3783	4632	6633	8091	7065	4710
Balance	-190	-127	-63	-116	-42	-369	-111	136	-81	-560	-1125	-1517	216	1525
MDC dollar trade														
Total exports	493	590	716	889	1449	2050	1853	2129	2098	2666	3485	-	-	-
Total imports	730	773	831	1070	1568	2501	2320	2210	2573	3481	3904	-	-	-
Balance	-237	-183	-115	-181	-119	-451	-467	-81	-475	-815	-419	-	-	-
LDC dollar trade														
Total exports	170	186	192	260	355	712	1031	1193	1498	1610	1908	-	-	-
Total imports	123	130	140	195	278	630	696	1116	1113	1738	2569	-	-	-
Balance	47	56	52	65	77	82	335	77	385	-228	-661	-	-	-
Total ruble trade														
Total exports	873	968	1074	1203	1441	1575	1832	2099	2522	2723	2904	-	-	-
Total imports	799	952	1019	1120	1237	1500	1734	2065	2484	2594	2979	-	-	-
Balance	74	16	55	83	204	75	98	34	38	129	-75	-	-	-
USSR ruble trade														
Total exports	409	476	510	580	618	613	792	834	1003	970	1105	-	-	-
Total imports	418	451	436	481	517	564	687	796	998	978	1075	-	-	-
Balance	-9	25	74	99	101	49	105	38	5	-8	30	-	-	-

SOURCE: 1969-77 estimates from the foreign-trade data bank for Eastern Europe compiled by Vanous (The CMEA-FORTRAN Data Bank of Foreign Trade Flows of CMEA Countries, 1950-77). 1978-79 estimates were provided by Vanous.

*1975-82 total dollar figures are from the February 1983 Economic Memorandum.

Data for 1975-82 are for dollar trade; earlier data are for trade with nonsocialist countries only.

Reliance on food exports, combined with variability in domestic production levels, introduced the possibility of shortages in domestic food supplies.

Fourth, the remobilization strategy of the 1971-75 plan gradually built up substantial demand pressure in the economy. As with other investment booms, the surge associated with this strategy ran the risk of spilling over into aggregate excess demand and a deteriorating trade balance, as domestic absorption growth exceeded domestic output growth. Even before world market conditions deteriorated, there were some incipient signs of developing macroeconomic pressure of this kind in the Romanian economy. New investment starts increased dramatically, and disposable incomes of the population began to outpace expenditures, leading to an increase in household saving that suggested growing repressed inflationary pressure on consumer-goods markets. These signs were danger signals on the road to developing domestic shortages and bottlenecks that later impeded Romania's ability to weather the economic shocks of international disturbances.

Finally, although the Romanian leadership in the early 1970s appeared firmly in control and the Romanian population appeared willing to tolerate or accept its policies, its political ability to adjust to the adverse economic conditions of the 1970s was uncertain. The development strategy of holding down current consumption levels in favor of investment was defended on the grounds that it would make higher consumption levels achievable in the future. At some point, however, the leadership would have to begin to deliver on its promises of future consumption gains. To the extent that these promises were threatened by deteriorating external conditions, popular dissatisfaction and growing political difficulties could hamper the leadership's ability to introduce timely adjustment responses. In contrast to the Hungarian leadership, the Romanian leadership did not have a substantial reserve of legitimacy based on past successes in promoting consumer well-being that could be mobilized to support unpopular austerity policies necessitated by sudden changes in the external economic environment.

EXTERNAL SHOCKS, ADJUSTMENT PROBLEMS, AND POLICY RESPONSES: 1974-77

External Shocks

Like the other economies of Eastern Europe, Romania was subject to the terms-of-trade and export-demand effects emanating from external shocks in world economic conditions beginning in 1973. Romania

also had similar adjustment alternatives to choose from—additional net external financing, export promotion, import substitution, and macroeconomic slowdown or deflation. Ideally, the relative importance of external shocks on the Romanian economy and the relative importance of alternative adjustment responses should be assessed using some quantitative framework, like that of Balassa. Unfortunately, Romanian trade statistics are both limited and unreliable, so only a partial and tentative quantitative assessment is possible.

Romania's failure to report changes in its foreign-trade prices makes it difficult to measure the extent of the terms-of-trade losses suffered by the Romanian economy as a result of the first round of external shocks. An analysis by Jackson (1977) and some estimates of Romania's foreign trade prices by Vanous (WEFA) are the only available data sources for estimating such losses. According to Jackson, Romania's overall terms of trade declined by about 8 percent between 1970 and 1975; bloc terms of trade declined by about 6 percent; and nonbloc terms declined by about 19 percent. Vanous' estimates suggest a decline of about 22 percent in nonbloc trade but an actual terms-of-trade improvement of 2 percent in bloc trade. During the same period, the comparable figures for Hungary are an overall 17 percent deterioration, a bloc deterioration of 10 percent, and a nonbloc deterioration of 23 percent (Table 3 and WEFA data). Not unexpectedly, Romania's overall terms-of-trade losses were considerably smaller than those of the large net fuel importers—Hungary, the GDR, and Czechoslovakia. Romania was still self-sufficient in energy during the first half of the 1970s, so that the initial terms-of-trade effects stemming from increases in the relative price of oil were correspondingly smaller.

Between 1975 and 1977, Romania's terms of trade probably continued to decline, although more slowly. According to estimates of Jackson and Vanous, Romania's bloc terms of trade declined between 4 and 5 percent, but this was neutralized by some improvement in its terms of trade with the developed market economies (according to Vanous' estimate, an improvement of 10 percent). Romania's terms of trade with the developing market economies, however, continued to deteriorate by about 17 percent (Vanous' estimate) so that its overall terms of trade with nonbloc countries declined by about 1.4 percent.

Although there is no precise way to evaluate the underlying data on which these estimates are based, the figures in Table 3 indicate that they are consistent with overall trends in the GDR, Hungary, and Poland between 1975 and 1977. In addition, they are consistent with regional changes in Hungary's terms of trade during this period (Hungary's bloc terms of trade declined by about 8 percent, and its terms with nonbloc countries increased by about 4 percent). Intuition

suggests that the overall terms-of-trade losses suffered by the Romanian economy in 1970-77 were smaller than those suffered by net energy importers in Eastern Europe and throughout the developing world.

The export-demand effects of external disturbances on the Romanian economy are even harder to assess than the terms-of-trade effects. Nevertheless, some evidence suggests that they were substantial. First, the advanced industrial economies accounted for an average of 79 percent of Romania's convertible-currency export earnings in 1971-73, and the shares of these earnings in particular commodity groups during this period were as follows: 71 percent of machinery exports, 96 percent of fuel exports, 70 percent of raw-material exports, and 91 percent of food exports. Given the concentration of its convertible-currency exports in the advanced industrial economies, Romania was especially vulnerable to the slowdown in these economies that began with the oil crisis. As Table 20 indicates, this slowdown was accompanied by sharp reductions in the growth rates of all categories of imports, which implies slowdowns in the expansion of Western demand for Romanian exports.

Table 21 gives a second piece of evidence supporting the same conclusion. A comparison of the actual rates of growth of the exports of developing economies on world markets during 1963-73 and 1974-78 indicates that the 1974-78 growth rates for all categories of exports,

Table 20
IMPORT GROWTH RATES FOR DEVELOPED COUNTRIES,
BY COMMODITY GROUP, 1972-79*

Year	Raw Materials, Excluding Food			Machinery
	Food	Fuels		
1972	7.1	8.8	9.9	17.0
1973	5.7	4.5	12.6	19.4
1974	-14.3	-0.9	4.0	7.4
1975	1.0	-11.3	-13.1	-5.7
1976	17.5	0.9	12.4	30.7
1977	-1.8	-2.9	0.0	1.0
1978	0.9	1.0	-0.8	12.6
1979	5.3	14.9	1.6	13.5

SOURCE: United Nations, *Monthly Bulletin of Statistics*, July 1982 (Table III, Special Table E on quantity indexes for world trade).

*Growth rates in real volume of imports, by commodity type.

except manufactured goods to the less-developed countries, were substantially lower than the 1963-73 growth rates. These results confirm the dampening effects of the world economic slowdown on the export prospects of the developing countries, including Romania, in the aftermath of the first oil shock.

Adjustment Problems and Policy Responses

The Balassa methodology can be used to calculate Romania's hypothetical and trend exports in Western markets, broken down by commodity categories. The results are presented in Table 22. The slowdown in Western markets after 1973 sharply reduced the demand for Romanian exports, particularly food, which comprised 30 percent of Romania's exports to the West in the 1971-73 base period, and manufactures, which comprised another 20 percent.

The export-demand effects are based on the assumption of unchanged 1971-73 average export prices, and they measure pure quantity effects of reductions in world demand. To assess the quantitative importance of these effects, it is necessary to compare them with actual exports, also evaluated in base-period prices. The necessary data on Romanian export prices in Western markets over the 1971-78 period are not available in official Romanian statistics, but Vanous provides estimates through 1977 which can be used to deflate the actual dollar values of Romanian exports between 1974 and 1977 to get a constant price series in 1971-73 prices. Using this series, two tentative conclusions can be drawn from the results in Table 22. First, measured

Table 21
GROWTH RATES OF EXPORTS FROM LESS-DEVELOPED COUNTRIES,
1963-78^a
(Percent)

Years	LDC Exports of Manufactured Goods		Total LDC Exports		
	to Developed Countries	to Developing Countries	Fuel	Raw Materials	Food
1963-73	16.6	11.8	7.9	3.7	4.0
1974-78	10.0	12.3	1.0	1.1	2.8

SOURCE: Calculated using data from Balassa (IBRD).

^aGrowth rates of real volume of exports, by commodity type and geographic area.

Table 22
**EXPORT-DEMAND EFFECTS OF ROMANIA'S TRADE
 WITH CAPITALIST COUNTRIES, 1974-77**
 (Millions of dollars, 1971-73 average prices)

Item	1971-73 Average	1974	1975	1976	1977
Exports of manufactured goods to developed countries					
Trend	253.6	344.8	402.0	468.7	546.5
Hypothetical	253.6	336.0	315.5	421.5	425.3
Difference	—	8.8	86.5	47.2	121.2
Exports of manufactured goods to developing countries					
Trend	101.3	126.6	141.6	158.3	176.9
Hypothetical	101.3	146.6	162.6	184.5	205.5
Difference	—	—20.0	—21.0	—26.2	—28.6
Fuel exports to capitalist countries					
Trend	137.9	160.5	173.2	186.9	201.7
Hypothetical	137.9	156.4	136.2	153.4	154.0
Difference	—	4.1	37.0	33.5	47.4
Raw-material exports to capitalist countries					
Trend	409.2	440.0	456.3	473.2	490.7
Hypothetical	409.2	406.3	414.9	440.6	432.7
Difference	—	33.7	41.4	32.6	58.0
Food exports to capitalist countries					
Trend	384.9	416.3	433.0	450.5	468.6
Hypothetical	384.9	374.9	374.9	407.9	407.9
Difference	—	41.4	58.1	42.6	60.7
Total exports to capitalist countries					
Actual (1971-73)	1286.9	1723.9	1847.5	2079.0	2157.0
Trend	1286.9	1488.2	1606.1	1737.6	1884.4
Hypothetical	1286.9	1420.2	1404.1	1607.9	1625.4
Effects (trend - hypothetical)	—	68.0	202.0	129.7	259.0
Effects as a percent of actual total exports to capitalist countries					
—	—	3.9	10.9	6.2	12.6
Market share gain (actual - hypothetical)					
—	—	303.7	443.4	471.1	531.6
Market share gain as a percent of actual total exports to capitalist countries					
—	—	17.6	24.0	22.6	24.7

SOURCE: Calculations are based on data on the values and prices of Romania's exports to and imports from capitalist countries, taken from the foreign-trade data bank for Eastern Europe compiled by Vanous (The CMEA-FORTRAN Data Bank of Foreign Trade Flows and Balances of CMEA Countries, 1950-77).

relative to the average real quantity of exports, the total export-demand effects for Romania were somewhat smaller than those for Hungary but were within the range of effects measured by Balassa for other newly industrializing and developing economies. On average, over the 1974-78 period, these effects amounted to approximately 8.3 percent of the real value of Romania's exports to the West. Second, a comparison of the estimates of the actual and hypothetical values of exports over the 1974-77 period suggests that Romania was able to increase its market share. On average, the gain amounted to about 22 percent of the real value of Romania's Western exports and more than offset the export-demand effects from external shocks. This gain indicates that Romania responded to the adjustment problems associated with world economic disturbances by successful export promotion.

Unfortunately, Romanian data are inadequate to make a consistent quantitative assessment of Romania's alternative adjustment strategies, using the Balassa framework. Only tentative conclusions can be drawn from the fragmentary and approximate evidence. The behavior of aggregate growth rates between 1974 and 1977 suggests that a growth slowdown to moderate import demand was not one of Romania's adjustment strategies. Aggregate growth rates during the period averaged 10.4 percent, only slightly below the 1971-73 average of 11.1 percent, and this was the result of a slowdown in agricultural growth rates between the two periods. Industrial growth rates actually increased slightly. Both the overall and the industrial growth rate began to slow only in 1978, and, as will be argued below, this was the result of supply bottlenecks in the economy rather than adjustment policy efforts.

Using Vanous' estimates for Romania's import prices on Western markets, it is possible to assess the extent of active import substitution as an adjustment response. Romania's preshock long-term elasticity of import demand from Western markets during 1965-73 was approximately 1.3 (Fink, 1981, and estimates based on Vanous data). This estimate and the average annual growth of national income of about 10.4 percent indicate that in the absence of active import substitution measures, the real volume of Romania's imports should have increased at an average annual rate of 13.5 percent between 1974 and 1977. In fact, the data indicate an actual rate of increase of about 3.1 percent, implying an import elasticity of about 0.30, less than one-quarter of the long-term elasticity. These findings suggest that import substitution in Western markets was one of the successful adjustment strategies pursued by the Romanians in response to deteriorating conditions on Western markets after 1973.

Finally, evidence on Romania's Western trade deficit over the 1974-77 period suggests that additional net borrowing was only a

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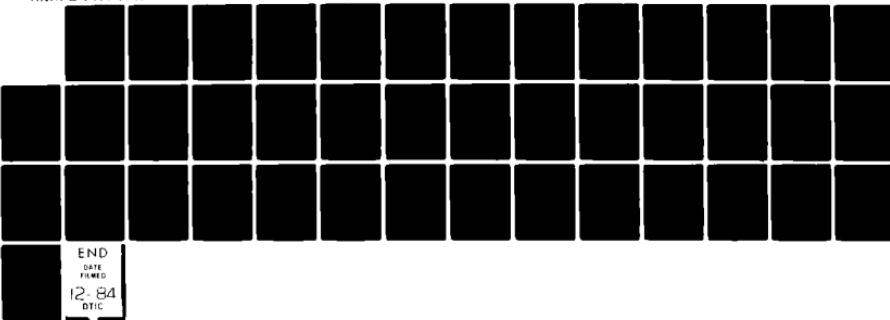
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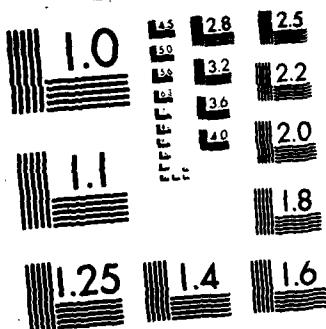
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temporary adjustment strategy in 1974. After a bulge in the deficit in that year, the average deficit over 1975-77 dropped to a level below that realized in 1970-73. The drop in the average nominal deficit is especially noteworthy, because Romania's terms of trade with Western markets deteriorated sharply between these periods. Not only did Romania eschew additional foreign financing as an adjustment strategy, it actually successfully used other policies, most notably export promotion and import substitution, to reduce its foreign financing. Even more remarkably, the Western resource gap and related foreign borrowing through 1977 declined in nominal terms without any slowdown in Romania's growth rate. Viewed from this perspective, Romania seems to have weathered the initial difficulties stemming from external economic disturbances much better than Hungary and most other developing economies.

One possible explanation for Romania's successful efforts to reduce its Western trade deficit during 1975-77 is diversion from bloc markets. Table 19 indicates that Romania's ruble surplus declined from an average of 89.8 million rubles in 1970-73 to 61.0 million rubles in 1974-77. Although this decline might have reflected trade diversion, it might have been the result of a deterioration in Romania's bloc terms of trade, which would have reduced the surplus at constant real flows of exports and imports. Trade diversion is more apparent in comparisons of the rates of growth of Romania's bloc exports and imports in constant prices between the 1970-73 and 1974-77 periods. Based on Vanous' bloc price data, the growth rate of Romania's real bloc imports increased from an average of 6.0 percent in 1971-73 to 9.5 percent in 1974-77, suggesting some diversion of import demand from Western sources to bloc suppliers. Similarly, the growth rate of Romania's real bloc exports declined from an average of 13.3 percent in 1971-73 to 5.5 percent in 1974-77, suggesting some diversion of exports from bloc markets to Western markets.

On balance, the assessment of Romanian economic adjustment to the first round of external shocks on Western markets is a positive one. Domestic growth rates were maintained, and after a temporary increase in 1974, the Western trade deficit declined to levels that were low compared with preshock levels. Both export-promotion and import-substitution policies targeted at Western markets appear to have been successful, in part because of trade diversion from bloc markets. Moreover, these external adjustments apparently did not entail any sacrifices in domestic consumption. Indirect indicators of personal consumption—such as the index of total retail sales, the index of retail sales of nonfood consumer goods, and the index of retail sales of food—increased somewhat more quickly in 1974-77 than in 1970-73.

Real wages per employee in the socialist sector rose more quickly in 1976-77 than in either 1971-75 or 1966-70. Real per capita income rose at approximately the same annual rate in 1976-77 as it did in 1971-75. The only danger signal in the consumption sector was the fact that the money supply held by households increased considerably faster than both household money incomes and combined household expenditures on retail sales and services, indicating the persistent buildup of repressed inflationary pressure on consumer-goods markets and pointing to possible shortages of consumer goods and rationing in the future.

From the perspective of 1977, Romanian economic performance during the 1970s looked remarkably successful. The 1970-78 period was one of rapid economic growth and structural change, with important improvements in agricultural production and per capita output levels, and a reduction in the trade deficit with the West. By the end of 1977, all financial indicators of external creditworthiness, such as the debt-service ratio, the debt-export ratio, the debt-GNP ratio, and the per capita debt level, placed Romania second among all East European countries, just behind Czechoslovakia. Whereas the Czech debt situation was the product of stagnant growth rates, however, Romania managed to keep its reliance on external credit within easily manageable limits while growing rapidly.

EXTERNAL SHOCKS, ADJUSTMENT PROBLEMS, AND POLICY RESPONSES: 1978-81

In retrospect, 1978 marks a turning point in Romanian economic performance. Industrial growth fell sharply, bringing down the growth of national product. Unfinished investment in the socialist sector more than doubled, and the increase in unfinished investment amounted to about 8.6 percent of national product (Brada and Jackson, 1981). Actual production fell below target levels in most major industrial branches, particularly in fuels, electrical energy, chemicals, metallurgy, and food processing. The Western balance of trade slipped from near-equilibrium in 1976-77 to a large deficit position. Romania's Western trade performance deteriorated sharply in virtually every major commodity group. Deficits in machinery and equipment, fuels and raw materials, and agricultural raw materials widened, and export surpluses in processed consumer goods and consumer manufactures increased only modestly. Deteriorating trade performance showed up in large deficits with both the Western industrial countries and the oil-exporting developing countries.

The downturn in Romanian economic performance predated the second round of external shocks in the world economy and appears to have been the consequence of internal shocks or policy errors. In particular, it seems to have been the result of developing domestic supply constraints and excess demand pressures that were the predictable result of the investment boom launched in the early 1970s. As a result of the industrialization drive of the 1971-75 and 1976-80 plans, net investment rose from an estimated 29.5 percent of net material product in 1966-70 to 33.1 percent in 1971-75 and then to 36.9 percent in 1976-78 (Brada and Jackson, 1981, estimates).

Studies of investment cycles in both the Romanian economy and the other economies of Eastern Europe (Bauer, 1978 and 1981; Kornai, 1981) indicate that sustained investment buildups are eventually followed by slowdown and retrenchment. Fundamentally, the slowdown is the result of limitations on the economy's ability to absorb new investments. Domestic supply shortages of raw materials and energy and capacity constraints in domestic machinery and construction industries can cause delays in the completion of investment projects in progress. These delays reverberate throughout the economy, causing further shortfalls in domestic production targets as producers are unable to obtain their material allocations. The situation is aggravated by the responses of enterprises to conditions of increasing shortage, including the hoarding of materials and the use of illegal means to obtain inputs outside of plan channels. Moreover, as more managerial and worker effort is directed at trying to overcome unexpected input shortages, the efficiency of resource use tends to decline, slowing production increases still further. On consumer-goods markets, the investment boom and subsequent production difficulties result in growing repressed inflationary pressure.

On the demand side, the investment drive is usually accompanied by a rapid growth of money wages reflecting enterprise efforts to recruit and hoard labor supplies. On the supply side, general production difficulties and the preference accorded to priority heavy industries as input shortages intensify result in a slowdown in the growth of consumer goods. Together, these diverging demand and supply tendencies aggravate shortages and repressed inflation already existing on consumer-goods markets.

The foregoing scenario is consistent with available evidence about the functioning of the Romanian economy during the second half of the 1970s. Indeed, seen from this longer-run, comparative perspective, it is surprising that Romania's slowdown did not develop earlier. By 1977-78, the Romanian economy began to exhibit the traditional characteristics of shortage associated with an excessive investment

drive, including disruptions in raw material and fuel supplies, a sharp increase in the number and volume of incomplete investment projects, and shortages in consumer-goods markets such as those that occurred in 1977. These difficulties were aggravated by the effects of three factors in 1977: an earthquake and a miners' strike in the Jiu valley, both of which caused some temporary disruptions in domestic production, and the decline in net agricultural output, which may have caused some input shortages in the food-processing industry in 1978.⁴ Developing shortages and supply bottlenecks may also have been exacerbated by the import-substitution and export-promotion efforts of 1975-77.

The general slowdown in Romanian growth rates beginning in 1978 was accompanied by severe difficulties in the domestic production of fuels and growing shortfalls between planned and actual levels of domestic fuel production. The magnitude of the difficulties is suggested by Table 23. By 1978, production shortfalls in lignite resulted in shortfalls between planned and actual production levels in the coal industry of about 26 percent of the five-year plan target. Oil production, contrary to plan targets, actually peaked in 1976 and began a steady decline; by 1978, the shortfall between actual and plan levels amounted to about 9 percent of the five-year plan level.

Without a detailed sectoral analysis of developments in these two industries, it is impossible to pinpoint the causes of these large production shortfalls. Nonetheless, Romanian press reports and analyses suggest that at least a portion of the blame lies in delays in equipment deliveries, shortages of qualified personnel, and overloading of equipment, all of which are likely consequences of the dislocations caused by the investment boom and attendant excess demand pressures.

Production shortfalls also had important spillover effects. Shortfalls in lignite prevented planners from using lignite to fuel thermal power plants, producing shortfalls in electrical power generation and a diversion of fuel oil. Shortfalls in domestic oil production necessitated increasing oil imports for the oil-refining industry, the capacity of which had increased from 18.5 million tons in 1973 to 33.0 million tons by 1980. Shortfalls in domestic oil supplies may also have contributed to supply bottlenecks in the chemical industry, although problems in

⁴As Brada and Jackson (1981) point out, poor agricultural performance in 1977 was probably not the cause of the sharp decline in the growth of gross output of the food-processing industry in 1978. Even though net agricultural output in 1977 fell about 4.0 percent from the record levels of 1976, gross agricultural output, a better approximation of total agricultural supplies, suffered only a small decline. Furthermore, the level of gross agricultural output in 1977 was approximately equal to the planned level, so it is hard to explain the divergence between planned and actual growth in the food-processing industry in the following year.

Table 23
PLANNED AND ACTUAL PERFORMANCE IN ROMANIA'S ENERGY PRODUCTION,
1975-80

Item	1975	1976	1977	1978	1979	1980
Total net coal output (thousands of metric tons)						
5-year plan	—	—	—	—	—	—
Annual plan	30,000	29,600	33,530	36,440	45,230	54,090
Actual production	27,091	25,842	26,778	29,263	32,764	35,200
Net liquid and brown coal (thousands of metric tons)						
5-year plan	—	—	—	—	—	—
Annual plan	—	—	—	—	—	—
Actual production	19,771	18,731	19,631	21,846	24,656	27,100
Crude oil extracted (thousands of metric tons)						
5-year plan	—	14,700	14,800	15,100	15,300	15,500
Annual plan	—	14,700	14,850	15,100	14,800	15,000
Actual production	14,590	14,700	14,650	13,724	12,323	11,500
Methane gas extracted (millions of cubic meters)						
5-year plan	—	26,800	27,800	26,800	26,800	26,800
Annual plan	—	26,300	27,830	26,830	27,130	27,130
Actual production	27,001	29,834	28,755	28,973	27,189	28,200
Electric power production (billions of kwh)						
5-year plan	—	57,500	63,100	66,350	71,700	76,900
Annual plan	—	57,500	63,100	64,510	70,250	72,000
Actual production	53,721	58,266	59,858	64,255	64,933	67,500

SOURCE: Brada and Jackson (1981).

the completion of new capacity were probably responsible for this industry's failure to meet its plan targets.

Growing domestic supply difficulties in 1978 explain the across-the-board deterioration in trade performance in that year. East European investment booms often produce an "export-symmetrical" response, in which excess demand pressures and supply bottlenecks associated with the boom spill over into declines in net exports. Net exports decline as a result of the diversion of exportable supplies to domestic use and the growth of imports to cover gaps. Within the absorption-model framework, the investment boom leads to a generalized excess of domestic absorption over domestic output, reflected in a trade deficit. According

to the investment-cycle analysis, this is the *ex post* result of unexpected excess demand pressures that develop as the economy exhausts its ability to absorb investment.

Both the absorption model and the investment-cycle analysis provide essentially macroeconomic explanations of deteriorating external performance. In the case of Romania, like other inward-looking developing economies, however, structural or microeconomic explanations should not be overlooked. The industrialization strategy motivating the investment boom of the 1970s was fashioned on autarkic, import-substituting principles. Despite Romania's low level of economic development, investment priority was accorded to the advanced industrial branches of machinery, metallurgy, and chemicals. By 1975, the shares of machinery and metallurgy in total Romanian industrial output were larger than comparable shares in Hungary and Poland, and the share of chemicals in total Romanian industrial output was larger than comparable shares in the Soviet Union, Czechoslovakia, and Hungary (Jackson, 1977). Romania's autarkic development strategy had two long-run implications for its external performance: It made Romania increasingly dependent on imports for critical raw material and fuel inputs; and it made Romania's foreign earning capabilities dependent on industrial exports, the competitiveness of which was hampered by the well-known quality, marketing, and incentive problems of traditional centralized methods of planning and foreign-trade decisionmaking. The deterioration of Romania's trade performance in Western markets beginning in 1978 may have been in part the consequence of these longer-run tendencies, although without further analysis it is difficult to explain how Romania successfully countered these tendencies to improve its trade position between 1975 and 1977.

The problems of domestic bottlenecks and shortages and their manifestation in incomplete investment projects, delays in input deliveries, and repressed inflation in consumer-goods markets continued through the end of the 1976-80 plan period. These problems were aggravated by a poor harvest in 1980, when gross agricultural output declined by an estimated 5 percent. Domestic economic difficulties were also complicated by the second round of shocks in external commodity and capital markets that began in 1978.

Romania was especially hard hit by large increases in world crude oil prices between 1978 and 1980. Because of declining domestic production levels, Romania was forced to increase dramatically its imports of crude oil. Between 1976 and 1980, the volume of petroleum imports more than doubled, increasing by 46 percent in 1978, 10 percent in 1979, and 11 percent in 1980 (Brada and Jackson, 1981, Table 21).

Unlike the other East European countries, Romania did not purchase crude oil from the Soviet Union at subsidized intrabloc prices. Nearly all of its oil imports came from Middle Eastern sources; and even when Romania began to purchase oil from the Soviet Union in 1979, it had to pay world prices in hard currency.

A unit value index for Romanian oil imports constructed by Brada and Jackson (1981) shows an increase of 55 percent in 1979 and 66 percent in 1980. Comparable price increases on world markets estimated from the crude petroleum export price index reported in the *UN Statistical Bulletin* are 55 percent and 74 percent, respectively. Sharply increasing prices and quantities produced a deterioration in Romania's fuel trade deficit with Western markets, which increased from an average of \$205 million in 1976-77 to \$612 million in 1978, \$606 million in 1979, and \$2110 million in 1980 (WEFA, CPE Service, *Current Analysis*, July 28, 1982). To some extent, of course, crude-oil import requirements were covered by exports of refined oil products to Western markets, but the profitability of these exports appeared to decline in 1979-80, as a result of a decreasing spread between Romania's crude oil import prices and its refined export-product prices. Finally, Romania may also have been adversely affected by temporary disruptions in its supplies of imported crude oil as a result of the overthrow of the Shah of Iran. Romania may have been forced to substitute oil purchases at higher spot-market prices for purchases that would ordinarily have been made at lower long-term contract prices, possibly as part of some barter arrangement.

As a result of internal excess demand pressures, supply-side difficulties in export performance, and world price trends on the oil market, Romania's trade deficit with the West rose dramatically—by nearly \$1 billion between 1977 and 1978 and by another \$325 million in 1980. The cumulative deficit for 1978-80 amounted to a staggering \$3.5 billion. The financing of this deficit more than doubled Romania's gross external debt, from a year-end level of \$4.0 billion in 1977 to a year-end level of \$10.3 billion in 1980 (WEFA estimates). Most of this increase involved Western commercial banks. It occurred when external private capital-market conditions were also worsening, as reflected in tendencies toward shorter maturities and higher nominal interest rates. Probably the most worrisome aspect of the rapid increase in Romania's indebtedness was its concentration in short-term maturities. At the end of 1979, about 51 percent of Romania's commercial debt had a maturity of up to one year, compared with 43 percent in 1980 (Fink, 1981).

Despite steadily deteriorating external performance and internal signs of increasing economic difficulty, there was little indication of an

adjustment strategy on the part of the Romanian leadership. Signs of intended austerity or macroeconomic deflation appeared in the form of reduced growth targets for national product and investment in the annual 1979 and 1980 plans and in the reduced growth targets for all indicators, except foreign trade turnover and agricultural output, in the 1981-85 plan directives, issued in November 1979. The planned reductions in growth rates, however, did not seem adequate to the magnitude of the developing crisis, and actual growth rates in 1979 and 1980 fell below even the reduced target rates. The failure of the Romanian leadership to enact a successful stabilization effort in 1979-80 and the sharp increase in the Western deficit in 1980 despite a deceleration in growth rates to their lowest levels in ten years raised growing concern about the willingness and capability of the Romanians to fashion an adjustment strategy to respond to their problems.

The plan targets for 1981 continued to reflect Romanian intentions to engineer a growth slowdown to restore external equilibrium, and in some ways the 1981 plan was more realistic than its 1979 and 1980 predecessors, especially in terms of physical output targets set for many products. However, the actual slowdown was much more dramatic than had been foreseen, for two reasons: First, gross agricultural output declined by 0.9 percent, compared with a planned growth rate of 9.0 percent. Coming after the 5.0 percent gross output decline of 1980, this further decline caused gross output to fall below its 1978 level. This interfered with the planners' intentions to boost hard-currency food exports to reduce the Western trade deficit and led to growing food shortages that culminated in compulsory rationing by autumn. Second, during the second half of the year, Romania confronted a rapid cutoff in its access to external finance, the result of growing concern in the international capital market about Romania's creditworthiness, due in part to the spillover effects of the Polish crisis, in part to Romanian payment arrears, and in part to Romania's unwillingness to provide external lenders with timely, reliable information on its external financial situation. Although these lenders had been willing to extend substantial amounts of credit to Romania on the basis of very little information in the past, unexplained repayment difficulties in 1981 and the general tightening of international credit conditions toward Eastern Europe made them unwilling to continue to do so.

The rapid cutoff of external credit imposed a binding capital-account constraint on Romania's ability to import from Western markets. It is impossible to determine the extent to which the growth slowdown in

1981 was the result of this constraint and the extent to which it was the result of active stabilization efforts. Both factors played a role in explaining the sharp declines in the overall growth rate, in the value of hard-currency imports, and in the real level of investment. As a consequence of both intention and necessity, by the end of the year, the domestic economic slowdown and the associated drop in imports from Western markets had produced a turnaround in Romania's balance of trade with the West from a 1980 deficit of about \$1.5 billion to a 1981 surplus of about \$210 million.

The lack of estimates for price trends in Romanian foreign trade after 1977 prevents a precise analysis of the roles of export-promotion and import-substitution efforts in the improvement of Romania's trade position in 1981. Using world price trends for various categories of Romania's exports and imports, however, predicted export and import values, based on historical (1966-79) Romanian import and export elasticities in its Western trade, can be compared with actual performance. The results and the assumptions on which they rest are reported in Table 24.

Based on the long-run elasticity measure and world price developments, the value of Romanian exports to developed countries should have increased by 2.8 percent in 1981. The actual increase is estimated at about 5 percent, indicating a possible growth in market share and temporarily successful export-promotion efforts. On the import side, based on the long-run elasticity measure and world price developments, the value of Romanian imports from the West (both developed and developing countries) should have increased by 2.5 percent in 1981. The actual result was a decline in Western imports by nearly 17 percent, indicating at least temporarily successful import substitution. Imports apparently declined not only because the growth rate declined but also because the Romanians were once again able to reduce the import dependence of a given growth rate at least temporarily.

Despite Romanian policy pronouncements, no meaningful reforms were introduced through the end of 1981. The adjustment that occurred was the result of austerity, not reform. Decisions continued to be made administratively, and the incentive structure remained unchanged. Some domestic prices were revised upward, resulting in a 12 percent increase in both industrial and agricultural prices and bringing them closer to world market levels. In the absence of institutional and incentive reforms, however, the effect of these price revisions on economic performance remained minimal.

Table 24
PREDICTED VALUES OF ROMANIA'S EXPORTS AND IMPORTS
IN WESTERN TRADE, 1981-85

Item	1981	1982	1983	1984	1985
Romanian Exports to OECD, Developed Market Economies					
Growth of export volume ^a	3.2	2.2	6.8	9.5	10.0
Growth of export price ^b	-0.4	-3.4	3.1	7.9	8.1
Growth of export value ^c	2.8	-1.3	10.1	18.2	18.9
Actual growth of export value ^d	5.2	NA	NA	NA	NA
Romanian Imports from Western Markets, both Developed and Less Developed					
Growth of import volume ^e	2.7	7.4	6.9	7.2	7.2
Growth of import price ^f	-0.2	-4.1	2.8	8.0	8.5
Growth of import value ^g	2.5	3.0	9.9	15.8	16.3
Actual growth of import value ^h	-16.6	NA	NA	NA	NA

^aPredicted export volume growth rates based on long-term (1966-79) export elasticity to the West of 2.7 (Fink, 1981) and predicted growth rates of GNP in the OECD countries (IMF, *World Economic Outlook*, 1981, Table 43, p. 183).

^bPredicted export prices are a weighted average of projected world price changes for manufactures, fuels, raw materials, and food. Projected price changes are taken from IMF, *OECD Economic Outlook*, 1982 (Table 22) for prices through 1983; projected price changes for 1984 and 1985 incorporate a relative improvement in raw-material prices reflecting a business-cycle upturn. Projected fuel prices for 1984 and 1985 assume a real increase of 3.5 percent per annum in the price of oil over the projected growth of the OECD GNP deflator (IMF, *World Economic Outlook*, 1981, Table 43, p. 183). To calculate the growth of overall export prices, the price projections for the individual commodity groups are weighted by the 1977-80 share of each group in the total value of Romania's exports to developed Western economies. The value weights are manufactures, 0.29; fuels, 0.32; raw materials, 0.25; food, 0.14. These weights are calculated from data provided by Vanous.

^cDerived from the projected growth rates of export volume and export price.

^d1981 estimated growth rate from WEFA, CPE Service, *Current Analysis*, March 1, 1982.

^ePredicted import volume growth rates based on long-term (1966-79) import elasticity from the West of 1.3 (Fink, 1981) and predicted growth rates of net material product (NMP) in Romania as follows: 1981, 2.1 percent; 1982, 5.7 percent; 1983, 5.3 percent; 1984, 5.5 percent; 1985, 5.5 percent. The 1981 NMP growth rate is an estimated actual rate. The 1982-85 growth rates are taken from the projections of the *Romanian Economic Memorandum*.

^fPredicted import prices are a weighted average of projected world price changes for manufactures, fuels, raw materials, and food. To calculate the growth of overall import prices, the price projections for the individual commodity groups are weighted by the 1977-80 share of each group in the total value of Romanian imports from Western countries. The value weights are manufactures, 0.23; fuels, 0.32; raw materials, 0.35; food, 0.10. These weights are calculated from data provided by Vanous.

^gDerived from the projected growth rates of import volume and import price.

^h1981 actual growth rate estimated from data in the first and second *Economic Memoranda* provided by the Romanian government to its commercial lenders.

ADJUSTMENT PROBLEMS AND CAPABILITIES: A FORWARD LOOK

Romania's austerity measures in 1981 were motivated by growing concern both within and outside Romania about the economy's ability to service the large debt that had accumulated by the end of 1980. As in Hungary, the extent of the burden of Romania's debt-servicing requirements on its domestic resources is suggested by considering them as a share of Romania's gross domestic product. Table 25 contains the results required for such an analysis. The table is similar in construction and interpretation to Table 17 (which presents data for Hungary), although the Romanian calculations should be interpreted more tentatively, given the well-known shortcomings of Romanian data. On average in 1980-81, debt-service requirements amounted to about 3 percent of Romania's gross domestic product. From a comparative and historical perspective, a debt-service burden of this size does not appear excessive. According to similar calculations made by Holzman for the East European economies in the mid-1970s, Romania's debt-service burden in 1980-81 was no worse than similar burdens that had been successfully weathered by Bulgaria, the GDR, and Hungary as early as 1975 (Holzman, 1980). In addition, a comparison of the 1980-81 figures for both Romania and Hungary suggests that the debt-service burden in Hungary was at least twice that in Romania. A comparison of debt-service requirements with the growth of Romanian output in 1980-81 also suggests that the Romanian situation was not as difficult as that in Hungary. In Romania, 116 percent of the 1980-81 growth rate in domestic output was absorbed by debt-servicing requirements, indicating that these requirements exceeded the average increment in domestic output in those years by only about 16 percent. Moreover, when Romania's 1980-81 debt-servicing requirements are compared with a more optimistic measure of its growth potential over the 1981-85 period, the share of the growth rate in domestic output taken up by debt-servicing requirements of the size encountered in 1980-81 is only 83 percent. This suggests that if Romania manages to grow at 3.5 percent per year between 1982 and 1985, it may still have additional resources available for domestic use after debt-servicing requirements are met, provided those requirements do not rise sharply above their 1980-81 levels.

In light of these findings, it seems surprising that Romania was unable to meet its repayment obligations in 1981. Indeed, none of the traditional indicators of creditworthiness, such as the debt-service ratio, the debt-GNP ratio, or the per capita debt level, indicated that Romania would encounter serious debt-servicing difficulties in 1981.

Table 25
THE BURDEN OF ROMANIA'S DEBT-SERVICE REQUIREMENTS,
1980-81

Item	1980-81 Average (percent)
Hard-currency, Western exports as a share of GNP	9.0
Debt service as a share of hard-currency Western exports	32.5
Debt service as a share of GNP (product of first two items above)	2.9
Share of actual increment in GNP due in debt-service payments	116.0
Share of annual increment in GNP due in debt-service payments (assuming annual GDP growth of 3.5%)	83.0

SOURCE: Calculations are based on data from WEFA, CPE Service.

Despite the rapid growth of Romanian debt between 1977 and 1980, Romania still ranked just below Bulgaria and Czechoslovakia in 1980, suggesting that the rapid cutoff in short-term credit facilities, which led to a suspension of debt-service payments and to requests for rescheduling, was the consequence of a perceived loss of confidence in Romania by external lenders. This loss of confidence was in turn the result of the absence of a credible stabilization policy, coupled with Romania's unwillingness or inability to provide evidence to its creditors on its external financial and internal economic situation. Undoubtedly, the anxiety created by Polish repayment difficulties contributed to concern over Romania's repayment capabilities. Seen in this perspective, the 1981 Romanian repayment difficulties may have been the product of a short-term liquidity crisis rather than a medium-term adjustment crisis.⁵ Thus, the real adjustment burden of the Romanian economy during the next few years may be more easily managed than a reading of the chaotic events of 1981 indicates.

The future adjustment capabilities of the Romanian economy depend on several internal and external factors. The course of international interest rates and world trade growth will be important external factors. Both the 1982 and 1983 Romanian debt rescheduling set interest payments to 1.75 percentage points above the LIBOR, thereby

⁵For more on the distinction between a short-term liquidity crisis and a medium-term adjustment crisis, see Solberg (1982).

linking the interest burden to the course of world interest rates. Demand conditions in Western markets will also affect Romania's adjustment capabilities during the next few years. The generation of balance-of-trade surpluses to finance debt-servicing will be made more difficult by depressed demand conditions in Western markets that will limit Romania's export prospects and force greater reliance on import reductions. Romania's 1982 experience is suggestive. Hard-currency imports in value terms declined by about one-third, and this decline was critical to the substantial turnaround in Romania's Western resource gap. Several important Romanian exports to the West, including foodstuffs, shoes, clothing, and chemicals, depend on the flow of raw-material imports from the West (Droher and Martens, 1982). Internal supply difficulties caused in part by import restrictions, coupled with depressed conditions in the West, caused Romanian hard-currency exports in value terms to fall by about 15 percent in 1982.⁶

Another factor influencing the Romanian situation over the next few years will be the course of relative prices on international markets. In the absence of foreign price information, it is impossible to assess the magnitude of the terms-of-trade deterioration suffered by Romania during 1978-81, but Romania's growing dependence on energy imports, combined with the effects of the second oil price shock, suggests that it may have been quite large. The delayed effects of changes in world relative prices will continue to be felt throughout the rest of Eastern Europe, as intrabloc prices adjust during the next few years, and such changes will produce further terms-of-trade losses. But there is no reason to expect very large terms-of-trade losses in Romanian bloc trade in the near future. Romania's adjustment problems during 1978-82 were aggravated by an apparent decline in the spread between the export prices for its refined petroleum products and the import prices for its crude oil. The future course of this spread will be an important factor in Romanian adjustment prospects. Currently, Romania has adjusted to the world price situation by sharply curtailing its exports of refined oil products and by reducing the utilization of its oil-refining capacity (an estimated 30 percent of capacity was not utilized in 1981-82).

Romania's adjustment capabilities during the next few years will also depend on the course of Romanian-bloc and, more specifically, Romanian-Soviet economic relations. As part of its 1981-85 adjustment strategy, Romania hopes to double the volume of its bloc trade, a target that seems to match that planned for Romanian-Soviet trade.

⁶This figure and the 1982 hard-currency figure cited in this paragraph are based on data provided in the second *Economic Memorandum* presented to commercial banks by the Romanian government.

The planned growth in bloc trade is larger than that for total trade, suggesting an increase in the bloc share. Whether this planned diversion to bloc markets will help Romania's adjustment capabilities with the West depends critically on the prices and terms of Romanian-Soviet trade. The Soviet Union has so far appeared unwilling to adjust these terms to Romania's advantage. They have turned down Romanian requests for Soviet oil sales at subsidized intrabloc prices; they have forced Romania to sell some of its hard-currency exports to the Soviet Union for rubles; and they have not allowed Romania to run substantial ruble trade deficits. In addition, the first Romanian *Economic Memorandum* suggests that Romania actually ran a convertible-currency trade deficit with the Soviet Union through 1978 (WEFA, *Current Analysis*, November 9, 1982). The 1979-81 figures show a Romanian convertible-currency surplus with the Soviets, but the amounts involved are too small to provide much help in covering its convertible-currency deficit with the West.

Preliminary indicators of economic performance and policy during 1982-83 suggest that Romania will continue to meet its adjustment task through austerity measures necessitated by capital-account constraints on its import capabilities. Growth rates of national output (net material product) will remain depressed, substantially below the 8.9 percent rate realized between 1970 and 1979. In 1981 and 1982, actual growth rates are estimated to have been only 2.2 percent and 2.6 percent, respectively, according to official statistics. The official Romanian projection for 1983 is 3.5 percent, and this is probably overly optimistic. Given this performance, it is very unlikely that a recovery in growth rates to the 5 to 6 percent level forecast for 1984-85 in the first *Economic Memorandum* will be realized. At least through 1983, growth rates of domestic absorption remained negative, indicating a further drop relative to the 1980 peak. The prospects for possible gains in domestic absorption levels through the end of the plan period remain strictly constrained by import capabilities. Within total absorption, the burden of cutbacks will continue to fall disproportionately on net investment levels, which have fallen dramatically by about 4 percent in 1980, 22 percent in 1981, and 5.4 percent in 1982, according to official statistics, and were officially projected to fall by another 3.5 percent in 1983. Despite these successive cuts, however, the share of investment in net material product in Romania remains the highest among all of the bloc countries. Consumption levels, too, have suffered as a result of domestic austerity. Compared to the 1976-80 growth rate of 7.0 percent, consumption grew only 3.1 percent in 1981 and actually declined an estimated 1.5 percent in 1982, according to official statistics. Some western analysts feel that the 1981 figure overstates actual

growth and the 1982 figure understates actual decline.⁷ Certainly, these figures do not capture the squeeze on domestic consumption suggested by reports of shortages in consumer-goods markets during the past two years.

Overall, recent experience indicates that the Romanian leadership has responded to its adjustment crisis in a manner consistent with a traditional centrally planned economy—it has imposed sharp administrative cuts on imports and slashed domestic absorption levels, especially in investment. In this respect, Romania has been remarkably successful at mobilizing the kind of domestic austerity measures that are required for rapid short-term improvements in the balance of payments. To date, moreover, these measures have not led to any significant threat to the continued domination of the Ceausescu regime.

The short-term success of austerity measures, however, should not be interpreted as an indicator of steadily improving economic performance over the medium run. Certainly, there is no reason to anticipate that Romania will be able to regain the dazzling growth rates of the 1970s. As the experience of that decade suggests, the deceleration in growth rate in 1977-78 preceded external difficulties and was the consequence of internal factors in Romania's economic system and development strategy. These external factors will continue to play an important role in Romania's growth and adjustment prospects over the medium run.

At a macro level, the reduction in investment growth rates and the general decompression of excess demand tension in the economy through continued austerity measures may produce some efficiency gains in the economy. As studies of past investment cycles in Eastern Europe suggest, a period of stabilization following an investment boom often produces such gains, as the resource waste associated with production delays, storming to complete output and investment targets, and incomplete investment projects is reduced. Improvements in efficiency from these sources may enhance growth prospects over the next few years.

The reduction in investment rates required by the stabilization measures means that the record investment levels of the 1970s will not be repeated. With smaller additions to the capital stock and limitations on additions to the industrial labor force, projected to develop for demographic reasons between 1983 and 1985, the possibilities for rapid growth along the extensive lines characteristic of the 1970s will be

⁷For example, this argument is made by Wharton Econometric Forecasting Associates (WEFA, CPE Service, *Current Analysis*, May 1, 1983).

increasingly limited.⁸ Throughout the rest of the decade, Romania's growth potential will depend less on additions to factor inputs and more on the efficiency with which such inputs are used. In this respect, Romania has reached the boundaries of extensive growth reached earlier by its more developed East European neighbors. As their experience indicates, the traditional methods of central planning are ill-suited to fostering the efficiency gains required for the transition to an intensive growth strategy. Therefore, Romania's future growth potential will come to depend more and more on meaningful reforms along the lines of the Hungarian model. To date, however, there is no indication that the Romanian leadership will introduce such reforms.

If anything, the recent economic crisis has produced a centralization of economic decisionmaking, a strengthening of reliance on administrative measures, and a greater degree of ad hoc "voluntarism" in policymaking. Ceausescu has responded to the crisis by tightening central party dominance in economic affairs and by making ideological appeals for self-sacrifice, self-criticism, and nationalism. With the exception of some cosmetic changes in personnel and some major price increases, there has been no change in the economic system or the incentive mechanisms on which it is based.

At a sectoral level, both Romania's aggregate growth prospects and its adjustment capabilities will critically depend on domestic developments in agriculture and energy. According to the adjustment strategy outlined in the 1981-85 plan and the 1982 *Economic Memorandum*, the rate of growth of gross agricultural output in 1981-85 is to be an average of 25 percent higher than that realized in the 1976-80 period, while the population in agriculture will decrease by 17 percent and the land area devoted to agriculture will remain unchanged. The realization of these targets implies considerable improvements in agricultural productivity, even with projected increases in agriculture's investment share and in the use of chemical fertilizers. The most dramatic increases in agricultural production are planned for meat output, slated to increase from 2.4 million to 4.0 million metric tons. Related targets call for a 32 percent increase in per capita domestic consumption of meat and a sixfold increase in meat exports.

On the basis of Romania's performance during 1976-82, the realism of these targets is questionable. Romania made substantial gains in agriculture in the 1970s, but most of these occurred before 1977. Despite large investments in land reclamation and irrigation, which fell behind plan targets by the end of the decade, crop yields remain

⁸For a complete discussion of labor supply projections in Romania during the 1980s, see Jackson (1981).

sensitive to bad weather, and substantial year-to-year fluctuations make agricultural projections uncertain. By 1980, the failure of 1976-80 plan targets was reflected in cattle herds a million below planned levels and shortfalls of pig and sheep herds of 1.5 and 2.0 million, respectively. In 1978-79, animal mortality rates were about double those of 1975, as a result of inadequate fodder supplies, spoiled feed, and inadequate care of young animals (Jackson, 1981).

Future improvements in agriculture, especially in the production of meat, fruit, and vegetables, depend largely on organizational and incentive reforms in private agriculture. Despite policy-induced gains in peasant incomes relative to incomes in the state industrial sector in the 1970s, relative real incomes and other conditions of village life fail to provide adequate incentives; the younger, more productive workers prefer to migrate, leaving private agriculture increasingly in the hands of older, less productive workers and women. Without the provision of better incentives and improvement in the quality of agricultural labor, projected large increases, particularly in meat production, are not likely to materialize.

Under current conditions, it seems impossible for Romania to simultaneously earn a large convertible-currency surplus in agricultural products and increase domestic consumption levels as called for in its policy targets. Instead, over the next few years, a tradeoff between these two objectives is likely to persist.

If agricultural production fails to increase as a result of poor climatic conditions and bad harvests, as happened in 1980 and 1981, the convertible-currency surplus from agricultural trade is likely to remain small (it averaged only \$212 million in 1980-81, compared with \$527 million between 1975 and 1979) and to be realized only at the cost of improvements in domestic consumption. Because Romania, unlike Hungary, has heretofore failed to provide a sizable, stable margin of excess between agricultural production and growing domestic consumption requirements, it cannot rely on increases in net agricultural exports in its adjustment strategy.

Romania's future growth and adjustment prospects also depend on developments in the energy sector. In this sector, as in agriculture, the targets laid down in the 1981-85 plan and the 1982 *Economic Memorandum* are optimistic. They call for an increase in the physical output of brown coal and lignite by 25 percent in 1982 and 44 percent in 1983, compared with an actual 1975-81 increase of only 5.5 percent per year. Similarly, the output of crude petroleum is to increase by 7.6 percent between 1982-83 and 1981, compared with an average annual decline of 6.1 percent between 1977 and 1981. In contrast to these targets, Western projections of Romania's future energy supplies,

including those made by Wharton Econometric Forecasting Associates, the Economic Commission for Europe, and Brada and Jackson (1981), show smaller annual increases in the production of both lignite and oil. Preliminary results for 1982 suggest that Romania's official projections through 1985 are overly optimistic. Coal output increased by only 2.6 percent and oil output by only 0.8 percent.

Over the next few years, the course of oil imports will depend critically on the course of domestic oil production, the substitution of lignite and coal for oil in various domestic uses, and the level of refined oil exports. Unfortunately, evidence on which to base even tentative predictions about these developments is lacking. Given the role of energy in the growing balance-of-payments difficulties between 1978 and 1980, the feasibility of Romania's adjustment strategy depends critically on trends in Romanian energy production and consumption during the next few years.

Finally, it is important to recognize the political and systemic factors influencing Romania's adjustment capabilities during the next few years. The current legitimacy reserves of the Ceausescu leadership are low. Enforced austerity has heightened the dissatisfaction that gained momentum in the 1970s as a result of the leadership's inability to honor its commitment to future consumption gains as the return on its remobilization strategy. Leadership popularity is likely to continue to decline over the next few years, as domestic austerity continues. Despite plans to reduce consumption growth less than investment growth during the austerity period, real per capita incomes are projected to grow only 2.5 percent per year between 1981 and 1985, the lowest projection ever reported in Romania.

To some extent, production and distribution activities in the non-state sector or second economy will continue to ease the effect of austerity, as individuals circumvent official channels in favor of family and social channels that still link much of the population to the rural sector. Unlike the Hungarian leadership, however, the Romanian leadership has made no attempt to legalize and encourage the activities of the nonstate sector. As a result, such activities often impede rather than facilitate the realization of official targets, and their sub rosa character reinforces the perceived gap between the goals of the population and those of the leadership.

Finally, efforts to enforce consumption austerity as part of the adjustment strategy are likely to be hampered by the buildup of household saving and cash balances that occurred during the investment boom of the 1970s. This buildup suggests the existence of repressed inflationary pressure on Romanian consumer goods and food markets. Policy-induced reductions in the growth of supplies on such markets

are likely to confront the leadership with the necessity of choosing between politically unpopular shortages and politically unpopular price increases. Because of his monopolization of power, Ceausescu himself is likely to be viewed as responsible for this choice as well as for the other politically unpopular choices that will have to be made during the adjustment period. Dissatisfaction with the internal political and economic situation will probably continue to intensify. Whether it continues to manifest itself in sporadic protests, incessant complaining, widespread apathy and cynicism, and recurrent political reorganizations or purges, or whether it spills over into a more organized, broadly based threat to the Ceausescu regime is a matter for speculation. What is clear is that the alienation of the Romanian population will make Romania's adjustment task more difficult over the next few years.

IV. CONCLUSIONS

The deterioration in East European economic performance during the 1970s must be understood in the context of changing international economic circumstances. Major changes in world trade and capital-market conditions in 1973–75 and again in 1978–81 presented new kinds of problems for the East European countries, which, like developing countries in other regions, were confronted with large changes in the terms of trade between manufactured goods and raw materials, especially energy products, and slowdowns in foreign demand for their exports.

During the first round of external shocks in world trade, between 1973 and 1975, easy credit-market conditions made it possible and even desirable for the East European countries to respond passively to the balance-of-payments effects by borrowing abroad. This response, on the part of both the developing countries and Eastern Europe, is understandable for both policy and structural reasons. At a policy level, these countries were reluctant to sacrifice growth and development objectives. At a structural level, they lacked the micro and macro policy tools required to reduce domestic absorption quickly without a sharp economic slowdown. As the 1981–83 experience indicates, the East European economies are capable of cutting trade deficits dramatically in response to domestic austerity measures. The economic and political difficulties caused by such measures make them extremely costly, however, and it is not surprising that the initial response was to allow trade deficits to mount, especially in light of favorable external lending conditions.

The passive borrowing of the East European countries after the first wave of external shocks meant that they were already saddled with large amounts of outstanding debt when the second wave came. In this respect, too, they were in a position similar to that of the oil-importing developing countries. The large outstanding debt aggravated economic difficulties and made passive borrowing both unwise and increasingly infeasible. Tightening credit-market conditions beginning in 1978 made borrowing decisions that had seemed prudent under the low interest rates of the mid-1970s look like major errors. Because most outstanding debt was on a variable-interest-rate basis, rising real interest rates after 1978 increased the debt-servicing burden, adding to the balance-of-payments difficulties caused by oil price increases and the ensuing slowdown in world trade.

Concern on the part of lenders about making additional loans to East European countries was partly caused by East European trade deficits with the West, which were at historically high levels during 1976-78, when the combined deficits of the oil-importing developing countries had declined sharply below the record 1975 level. In addition, events in Afghanistan and growing indications of debt-repayment problems in Poland had spillover effects on the availability and terms of credit throughout Eastern Europe. As a consequence, by the end of the 1970s, the only policy option available was a sharp slowdown in domestic growth rates to cut import demand.

Lender concern about creditworthiness among developing countries began to gain momentum in 1981-82, so the differences between the policy responses of the East European countries as a group and the developing countries as a group are largely differences in timing. Overall, the similarities are striking. Deteriorating economic performance in East European countries during this period must have been in part the consequence of external events, since their mounting economic difficulties had causes that were neither unique nor internal to the region.

Despite the broad similarities in the experiences of the developing and East European economies, there were important differences between them and also among the East European economies themselves. Shared systemic features affected how all the Eastern countries responded to external shocks. At the macro level, planners were reluctant to impose measures for reducing domestic absorption. Moreover, as a consequence of the policy instruments they had to reduce absorption, their control over both its level and its composition was weak. Politically, they were constrained by social norms that precluded abrupt adjustments in wage and consumption growth in the short run except under crisis conditions. Institutionally, the system of incentives encouraged a strong investment drive over which the planners exercised only imprecise and cyclical control. Thus, planners had only limited ability to increase exports by redirecting output from domestic to foreign use or to reduce imports by slowing domestic growth except under crisis conditions.

At a micro level, the planners' ability to introduce effective policy responses to external shocks was constrained by the resource-allocation inflexibilities that are characteristic of planned economies. Changing international conditions required a reallocation of resources among sectors, enterprises, and investment patterns. For many reasons, such a reallocation was difficult to realize: A centralized, bureaucratic style of decisionmaking impeded flexible responses to new conditions and encouraged a repetition of past allocation rules; the incentive system

made enterprise managers insensitive to domestic price changes despite changes in comparable world prices; and the planners were reluctant to reallocate resources because of distributional changes in wage differentials, enterprise performance differentials, and job security.

Overall, a number of internal factors impeded the effective adjustment of the East European economies to external shocks. The relative importance of these factors varied among countries. Therefore, both to understand the reasons for growing economic difficulties in the 1970s and to assess the prospects for economic performance in the 1980s, the experiences of individual countries must be examined. In this study, the experiences of Hungary and Romania were considered.

Hungary

The prospects for Hungarian economic performance on the eve of the first round of external shocks were promising. During 1968-73, all major indicators of economic activity improved in accordance with the expectations of the 1968 reforms. But there were signs of unresolved economic difficulties in macroeconomic control, especially over the aggregate volume of investment. In addition, political sensitivity to growing differentials in enterprise profits and wage differentials both among workers in the state sector and between them and workers in the private sector (and Soviet concerns about the Hungarian reforms) led to some recentralizing measures by the end of 1973. Despite these measures, the principal features of the reforms remained intact. Overall, in the absence of external shocks, the Hungarian economy would probably have continued to improve, although no doubt with recurrent cycles in aggregate growth, investment activity, and balance-of-payments difficulties in Western markets. In this sense, Hungary's growing economic difficulties during the 1970s were mainly due to external factors.

Hungary was particularly adversely affected by sharp deteriorations in its terms of trade in both Western and Eastern markets. Losses in Western markets were larger for Hungary than for a comparable group of oil-importing, newly industrializing countries elsewhere in the world. In Eastern markets, terms-of-trade losses were smaller, amounting to about 12 percent of average Eastern trade over 1974-78, because of Soviet willingness to continue to support the Hungarian economy by implicit price subsidies.

Hungary also faced export-demand difficulties as the result of a slowdown in foreign demand for Hungarian exports in Western markets, but they had less effect on Hungary's growing trade imbalance in these markets than did the terms-of-trade changes. In this respect, the Hungarian experience is similar to that of a comparable group of NICs.

Hungary's main problem was how to cope with deficits caused by large terms-of-trade losses; and the slowdown in Western export markets made the problem more difficult to solve.

Several factors at work in Hungary's Eastern trade helped in coping with the effects of external shocks in its Western trade. As already mentioned, because of implicit price subsidies, Hungarian terms-of-trade losses in Eastern trade were smaller than they would have been if relative prices in this trade had moved in accordance with world prices. In addition, Hungary was able to economize on some imports by switching from Western to Eastern sources. Finally, apparent Soviet willingness to allow Hungary to run a growing convertible-currency surplus in its bloc trade while it ran a ruble deficit permitted the Hungarians to finance growing deficits in Western markets in part by convertible earnings in Eastern ones.

Hungary responded to growing Western trade deficits mainly by borrowing. A passive borrowing response looked attractive because of the easy borrowing conditions in international credit markets. Such a response was also predictable, however, given the systemic features of the Hungarian economy that militated against active macroeconomic or microeconomic responses in the short run and the reluctance of the Hungarian leadership to introduce austerity policies.

Changes in international conditions created several disequilibria in the Hungarian economy. At a macroeconomic level, unchanged domestic output and demand levels implied a growing excess of imports over exports, plus a growing shortage of foreign exchange. At a microeconomic level, changing world prices implied disequilibria on several markets, especially energy-related ones, with resultant pressures for domestic price adjustments and resource allocation. Hungary responded to these pressures in a predictable manner, given its underlying systemic features. At a macro level, the Hungarian authorities were initially unwilling or unable to engineer a sustained growth slowdown to reduce imports. At a micro level, they were unwilling to permit the necessary changes in relative prices and resource allocations required by new world circumstances. The results were a reversal in the economic reform process, with a growing number of selective administrative interventions and a growing divergence between domestic and world prices. The breakdown of the reform incentive mechanism showed up in Hungary's poor export performance in Western markets and in the growing use of taxes and subsidies in its domestic economy.

The weakening of price incentives and greater administrative intervention in enterprise decisions also meant that investment decisions continued to be distorted in favor of import-substitution projects that

were inefficient at world prices. In this respect, Hungary, like most of the inward-oriented NICs, failed to use borrowed international resources to build new foreign-exchange earning capacity that would finance debt repayment in the future.

By 1978, the Hungarian authorities began to realize that they could no longer rely on borrowing to finance their persistent trade deficits with the West. Confronted with an estimated 50 percent increase in outstanding gross debt between 1976 and 1978 and with the rising debt-servicing burden implied by rising interest rates, the Hungarian authorities introduced several austerity measures in 1979 to reduce Hungary's Western trade deficit. The austerity program marked a transition from foreign borrowing to a macroeconomic growth slowdown as the major adjustment response of the Hungarian economy. This transition has persisted to the present and is embodied in the medium-term development strategy of the 1981-85 plan.

Hungary's decision to reduce the trade deficit by reducing domestic growth and attendant import requirements was characteristic of its response to past balance-of-payments difficulties. It was similar to decisions taken by other countries in Eastern Europe and in the developing world since 1979-80, either voluntarily or at the behest of international lenders and the IMF. Hungary, like many of these other countries, also chose to focus a disproportionate share of the slowdown in domestic growth on investment spending. This choice reflected the authorities' desire to insulate consumption levels from declines that might generate political dissatisfaction and was consistent with Hungary's long-run commitment to consumer satisfaction as a fundamental component of its social contract. However, consumption was not completely spared under the austerity regime, and consumption growth has slowed considerably since 1979, although there has been no actual decline in aggregate consumption levels.

In addition to enforcing a program of austerity after 1979, the Hungarians introduced several measures to improve economic performance. The introduction of reforms under the difficult economic circumstances of the period is surprising, since East European economies usually tighten administrative control in such situations. In fact, the stated intention of the Hungarian authorities since 1979 has been to reaffirm the economic reform, strengthening market incentive mechanisms, linking domestic prices to world prices, and reducing administrative intervention in decisionmaking. Available evidence, however, suggests that the intention has been only partly realized, at least within the state sector of the economy. Although domestic prices have been adjusted to conform more closely to world prices, the continued use of taxes and subsidies has insulated many production and investment decisions from the new price signals.

Hungary's reform experience since 1979 suggests three major conclusions. First, there remains a tradeoff between the efficiency objectives of economic reform and the distributional objectives of policymakers. Although the reform is desirable from the point of view of efficiency, innovation, and the like, it is threatening to the objectives of equity and of keeping the reallocation of capital and labor within manageable political and social limits. Consequently, at least within the state sector, the actual reform process should continue slowly, with the possibility of occasional reversals in the next several years.

Second, the austerity program itself threatens the reform's success. If Hungary is forced to compress Western imports too rapidly, the result will be production bottlenecks and shortages and a sharp contraction in domestic output levels. Under conditions of shortage, the most likely Hungarian policy response would be the strengthening of administrative measures at the expense of the reform. Such a reaction has been characteristic of many developing countries confronted with sharp contractions in their import capabilities.

Third, the most promising prospects for successful reform are in the nonstate sectors of the economy, especially small-scale industry and cooperative and private agriculture. These sectors have been a critical factor in Hungary's ability to slow its economy without imposing a potentially destabilizing decline in consumption. Hungary's long-term policy to encourage agricultural production in the cooperative sector has been especially important in mitigating the consumption effects of the austerity program. Because of a sizable exportable surplus in agriculture, Hungary has not been forced to cut domestic levels of food consumption in response to balance-of-payments difficulties, as have Romania and Poland in recent years.

Despite three years of economic austerity and two years of at least partial economic reform, the Hungarian economy continues to face severe difficulties. This is not surprising, given the large burden that outstanding debt-servicing requirements will impose on Hungary's net material product over the next few years. A continued reduction in Hungary's Western trade deficit to slow the growth of new borrowing and to service outstanding debt implies a continuation of austerity measures through the 1981-85 plan period. The extent of the growth slowdown required to realize these objectives will depend heavily on external factors, particularly external credit-market conditions, export demand conditions in Western markets, and Soviet willingness to allow Hungary to maintain or increase its dollar surplus in bloc markets while running deficits in its ruble trade.

Austerity measures can be expected to continue to produce improvements in Hungary's debt-servicing capabilities in the short run. At the

very least, these measures can stimulate exports by creating slack conditions in domestic markets, and they can reduce imports by reallocating demand away from import-intensive investment or by reducing the import requirements of a given growth rate. Austerity measures by themselves, however, will not promote the change in incentives and the reallocation of resources required for sustainable increases in Western exports or sustainable decreases in Western imports over the medium run. For this reason, Hungary's medium-term adjustment prospects depend importantly on the course of reform.

To sum up, Hungarian economic performance during the next few years, like its performance during the 1970s, will be shaped by external factors over which Hungarian policymakers have little or no control. Over the longer run, internal decisions, especially with regard to reforms in both the state and nonstate sectors, will play a more important role. Here, at least, the reaffirmation of reform objectives, the recent successes of the reforms in the nonstate sectors, and Kadar's continued legitimacy are promising signs for the future.

Romania

Romania poses some interesting contrasts to Hungary in terms of the effects of external and internal factors on economic performance during the 1970s. On the eve of the first round of international disturbances, Romania, like Hungary, showed signs of economic improvement relative to the 1965-70 period. Romania, however, had not reformed its traditional planning system and development strategy. Except for some adjustments in agricultural incentives, the Romanian system remained highly centralized in its methods of operation, and improving economic performance was mainly attributable to the major investment and mobilization effort of the 1971-75 plan. As with past ambitious plans, this one encouraged a buildup of demand pressures, the adverse effects of which were to become apparent in capacity shortfalls, production bottlenecks, and growing imported input requirements later in the decade.

The fragmentary available evidence suggests that the initial round of external disturbances had less adverse effects on Romania than on Hungary. Romania's terms-of-trade losses were not as great in either Eastern or Western trade during the 1970-77 period. In part, Romania's experience reflected the fact that it was not a net importer of energy, as were Hungary and most other NICs.

Romania was also initially more successful than Hungary in controlling the deficit-enhancing effects of external disturbances in its Western trade. After an increase in 1974, its average convertible-

currency trade deficit dropped in 1975-77 to a level below that of 1970-73. Moreover, this decline occurred without any perceptible slowdown in Romania's growth rate. Limitations on the availability and reliability of data preclude a definitive assessment of the reasons for Romania's successful adjustment during the 1974-77 period. But on the basis of the available evidence, it appears that Romania was able to reduce its Western trade deficit during 1975-77 by a combination of temporary export-promotion and import-substitution efforts, reflecting in part a diversion of Romanian exports from Eastern to Western markets and a diversion of Romanian imports from Western to Eastern markets. Despite this redirection in trade, Romania continued to run a surplus in its ruble trade with the East. Thus it was not the beneficiary of additional Soviet credits to finance larger ruble deficits during this period, as was Hungary. In addition, Romania did not purchase energy imports from the Soviet Union at subsidized intrabloc prices, so implicit Soviet subsidies to Romania were much smaller than those to Hungary or the other bloc countries.¹

As a result of its successful trade strategies, Romania did not rely on external borrowing to the extent that Hungary did following the initial external disturbances. Consequently, Romania's gross outstanding debt grew more slowly during the 1974-77 period; and by the end of 1977, its international indebtedness position remained easily manageable, according to the usual financial indicators of creditworthiness. An analyst looking at these indicators and at the course of Romania's trade imbalance with the West during 1975-77 would not have predicted the severe economic difficulties that began in 1978, but an analyst familiar with the consequences of a sustained investment boom in a traditional centrally planned economy would not have been surprised.

The downturn in Romanian economic performance that began in 1978, before the second round of external shocks in world markets, appears to have been the result of developing domestic supply constraints and excess demand pressures that were the predictable outgrowth of the investment drive launched in the early 1970s. In this sense, it is reasonable to conclude that the roots of Romania's growing economic difficulties that began in 1978 were mainly internal; and in this sense, too, Romania provides a contrast with Hungary, where the roots of economic difficulties were mainly external. In Romania, an

¹According to recent estimates by Marrese and Vanous (1982), Soviet implicit price subsidies to Romania were only 6.5 percent of total Soviet exports to Romania between 1974 and 1978. The corresponding figure for Hungary was 31.6 percent, and for the total bloc 33.8 percent. In real terms, Romania received only 0.9 percent of the total price subsidies granted to bloc countries during this period.

excessively ambitious development strategy slowed industrial growth, as capacity shortfalls and bottlenecks disrupted production, and sharply increased the trade deficit. Trade imbalances in both developed and developing Western markets grew rapidly, reflecting rising import requirements and faltering export supplies associated with excess demand in the domestic economy.

Although the economic slowdown and resulting trade imbalances occurred across a broad range of economic activity, particularly severe problems were encountered in the energy sector, where there were growing shortfalls between planned and actual levels of domestic fuel production. As a consequence, Romania's energy imports, especially imports of crude oil, began to grow sharply in 1978. Growing oil imports collided with sharply rising oil prices in 1979 and 1980 and were an important factor in the increases in Romania's Western trade deficit, which totaled \$3.5 billion between 1978 and 1980. Romania, unlike Hungary, purchased its energy imports at world market prices rather than at subsidized intrabloc prices and hence was more immediately affected by the second round of oil price increases in international markets.

Romania's large trade deficits between 1978 and 1980 were financed by large increases in foreign borrowing. During this period, there was another spurt of international lending to oil-importing developing countries, fueled by the second infusion of petrodollars into the international financial system, and Romania participated as a borrower to a greater extent than it had during the first round of petrodollar lending in 1974-75. Unfortunately for Romania and other borrowing developing countries, however, the debt-servicing burden of new loans increased sharply.

Despite deteriorating external performance and internal signs of economic difficulty, there was little indication of a feasible adjustment strategy from the Romanian leadership through 1980. Signs of internal austerity measures appeared in the form of reduced growth targets, but these were not adequate to the magnitude of the economic problems, and actual growth rates in 1979 and 1980 fell below even their reduced target levels.

Concern among international lenders about the ability or willingness of the Romanians to fashion a workable adjustment strategy was heightened by temporary Romanian payment arrears and by Romania's failure to provide lenders with timely, reliable information on its external financial situation. This concern culminated in a rapid cutoff of Romania's access to additional external finance by mid-1981 and the rescheduling of its outstanding debt shortly thereafter. Even at the time of rescheduling, traditional financial market indicators showed

Romania to be in a stronger position than Hungary in terms of its debt-servicing capabilities. This suggests that Romania's 1981 repayment difficulties were the result of a short-term liquidity crisis caused by the precipitous cutoff of external credit. Had credit conditions changed less drastically, Romania might well have been able to avoid a formal rescheduling of its debt by the end of the year.

In this respect, Hungary and Romania provide an interesting contrast. The Hungarian leadership recognized and responded to its economic difficulties in 1979 before it encountered borrowing constraints. Its willingness to act voluntarily and effectively in advance of repayment problems strengthened its creditworthiness in the eyes of international lenders. As a consequence, when temporary financial difficulties were encountered in 1982, it was able to secure the necessary emergency support to avoid a formal rescheduling. Romania, in contrast, failed to introduce a credible set of policies to reduce its Western trade deficit and borrowing needs until the rapid cutoff of external credit forced it to do so. By that time, it was too late to avoid a rescheduling of outstanding debt.

Under pressure from foreign lenders, including the IMF, Romania has followed a program of domestic economic austerity since 1981, resulting in sharply decreased growth rates, temporary shortfalls in domestic supplies of important consumer goods, especially food products, and dramatic improvement in Romania's Western trade balance. Despite some public pronouncements on economic reform, the austerity regime has not been accompanied by any meaningful reform measures. Indeed, if anything, enforced austerity has meant a strengthening of administrative measures and centralization in economic decisionmaking, as past experience in Eastern Europe would have predicted.

Romania, like Hungary, will continue to face severe economic difficulties during the 1981-85 plan period, and the most reasonable projection is for continued low growth rates and domestic austerity. Also as in Hungary, the magnitude of the growth slowdown required to keep the Western trade balance in line with capital-market constraints will depend critically on various external factors, including trends in relative prices, interest rates, and demand conditions in Western markets. Another important external factor shaping Romania's future prospects is the willingness of the Soviet Union to adjust the terms of Soviet-Romanian trade to Romania's advantage. The Romanians hope to increase their purchases of oil from the Soviet Union at subsidized intrabloc prices, but so far their efforts have been unsuccessful. Not only has the Soviet Union been unwilling to increase its lending to Romania through implicit price subsidies, but it has also been unwilling to extend external credit to finance persistent, relatively large ruble

trade deficits. Indeed, according to figures presented in the second *Economic Memorandum*, Romania actually ran a surplus in both its convertible currency and ruble trade with the Soviet Union in 1982, despite its severe adjustment problems in Western trade. So far, Soviet trade with Romania seems to support the view that Soviet implicit and explicit lending is offered to individual East European countries to the extent that they provide the Soviet Union with unconventional gains from trade in the form of military, political, and ideological allegiance.² Romania affords the smallest unconventional gains within the bloc, hence it receives the smallest amount of Soviet financial support in bloc trade. One other factor that may explain Soviet unwillingness to increase subsidized trade flows to Romania is internal bloc pressure. In 1980, the Soviet Union indicated that it would not increase its subsidized oil exports to bloc countries above 1980 levels. Members who previously received significant amounts of Soviet oil at subsidized prices might fear that any Romanian access to such trade would reduce their own.

Over the medium run, Romania's growth and adjustment prospects will depend critically on internal factors. With smaller additions to the capital stock because of import restrictions and domestic austerity, and with smaller additions to the industrial labor force because of demographic changes, Romania is confronting limits on its extensive growth strategy. Throughout the coming decade, Romania's growth potential will depend less on additions to factor inputs and more on the efficiency with which such inputs are used. The traditional methods of central planning are ill-suited to fostering such efficiency. Some decentralizing incentives and price reforms are required, but the present Romanian leadership is unlikely to support them. Therefore, Romanian economic growth will probably not regain the rates achieved during the 1970-77 period even if external conditions prove less adverse and domestic austerity measures are relaxed. In this sense, then, the roots of the growth slowdown that began in 1978 and will continue throughout the 1981-85 plan period are mainly internal.

Future prospects for Romania are also not auspicious as regards the consequences of continued austerity and external constraints on consumption levels. Because of the long-term neglect of agriculture, the Romanians, in contrast to the Hungarians, have failed to provide a sizable, stable margin of excess between agricultural production and growing domestic consumption requirements. Consequently, they have been forced to cut domestic levels of food consumption, and over the

²For more on the links between Soviet subsidies and unconventional gains from trade in the bloc, see Marrese and Vanous (1982).

next few years they will continue to face a tradeoff between their desire to earn a large convertible-currency surplus in agricultural products and their desire to achieve targeted increases in domestic food consumption.

Over the medium run, the prospects for improved efficiency and improved economic performance as perceived by the population appear to be better in Hungary than in Romania. This will continue to be the case as long as Hungary proceeds with meaningful economic reforms and Romania maintains its central planning system.

Policy Implications

Both Soviet and American policy actions will have important effects on adjustment, growth, and reform prospects in Hungary and Romania over the next few years. On the Soviet side, two considerations are important: first, the extent to which the Soviet leadership will tolerate or even encourage economic reforms to improve economic performance; and second, the extent to which it will be willing and able to provide financial support in the form of direct loans and indirect price subsidies in bloc trade. Soviet behavior toward developing economic difficulties in Hungary and Romania in the 1970s and early 1980s is consistent with the view that Soviet security interests in Eastern Europe remain predominant and that the Soviet Union is willing to pay a high price to safeguard those interests. Moscow has been willing to tolerate ideological deviance, as in the case of Hungary, as long as it perceives that there are no associated risks to its regional political hegemony. On an economic level, Moscow has been willing to bear large, sustained flows of financial aid to support East European regimes in return for the political and security allegiance they afford. This is apparent in its differential treatment of Hungary and Romania: Hungary's allegiance has been rewarded by a substantial flow of financial support; Romania's perceived political and military unreliability, by Soviet unwillingness to provide financial assistance.

In the foreseeable future, difficult economic conditions in Eastern Europe will pose a serious policy challenge to the Soviet Union. If intrabloc pricing rules remain unchanged, bloc prices are likely to move substantially in the Soviets' favor; Hungary's bloc terms of trade will decline by about 32 percent and Romania's by about 27 percent between 1980 and 1985 (Marrese and Vanous, 1982). These price developments will exacerbate economic difficulties throughout Eastern Europe, making the tradeoff between domestic growth and Western trade deficits even more adverse. Even in Hungary, the most stable and legitimate of the East European regimes, continued economic

stagnation is a potential threat to political stability and legitimacy, a threat which must be a source of anxiety for the Soviet leadership. Under current economic conditions, therefore, the Soviet Union will be under considerable pressure to maintain or even increase its financial support to Eastern bloc nations or to tolerate even greater degrees of ideological deviance. At the same time, however, serious economic difficulties within the Soviet Union will constrain its ability to provide financial assistance to East European economies, and Soviet fears of the political consequences of economic reform, aroused by recent events in Poland, may reduce Soviet tolerance for reform experiments.

On balance, it is difficult to predict precisely how the Soviet Union will respond to continuing economic difficulties in Eastern Europe during the next several years, particularly with the Soviet Union itself still going through a leadership transition, the results of which remain unclear. Most likely, the Soviet Union will continue to provide the East European economies with some form of financial cushion, at the very least to offset the projected deterioration in their bloc terms of trade, of which the Soviets will be the major beneficiary. Moreover, barring a major political crisis in a particular country, the actual extent of Soviet assistance to an individual country will continue to depend on that country's political allegiance and significance. Finally, given the fact that past flows of Soviet assistance have failed to produce tangible improvements in economic performance in Eastern Europe, it seems reasonable to suppose that future flows may be subject to some kind of conditionality. In particular, given its own economic difficulties, the Soviet Union is likely to replace generalized assistance in the form of price subsidies and ruble deficits with conditional assistance to support individual projects that would yield exports to fill projected Soviet needs.

On the Western side, several policy decisions will have potentially important effects on economic prospects in Hungary and Romania during the next several years. Given the sensitivity of the Hungarian and Romanian economies to both trade and capital-market conditions in the West, U.S. macroeconomic policy choices will be influential. A rapid U.S. economic recovery will encourage recovery in Western Europe, thereby improving export prospects for Hungary and Romania. The course of U.S. monetary and fiscal policies will continue to affect international capital-market conditions. A continuation of the policies that have produced high real interest rates in recent years will aggravate Hungary's and Romania's debt-servicing problems. In addition, specific U.S. policy measures targeted at Eastern Europe or at Hungary or Romania individually will be important. Hungarian and Romanian export prospects will continue to be affected by their access to most-

favored nation (MFN) treatment in the U.S. market, and their import prospects will continue to be affected by the availability of U.S. export credits and credit guarantees. American willingness to reschedule the official credits, in cooperation with the rescheduling of other official Western credits, will continue to be a condition sought for the rescheduling of private credits to both Hungary and Romania. Informal pressure by the United States on private lenders and the IMF will continue to influence their hard-currency borrowing prospects.

U.S. policies toward the Soviet bloc in general will continue to influence the attitudes of private lenders. The continued deterioration of U.S.-Soviet relations only strengthens tendencies toward a rapid, sharp cutback in private credit channels to Hungary, Romania, and the rest of the East European economies. If past history is any guide, such a deterioration—especially under conditions of political uncertainty surrounding the transition to a new Soviet leadership—is likely to reduce tolerance for reform in the Soviet Union and to encourage a conservative, wait-and-see attitude toward reform in Eastern Europe. In the absence of such reform, the most likely economic outcome in Hungary and Romania is the continuation of domestic austerity. In this respect, their prospects are similar to those of other developing nations that have received IMF assistance conditional on the implementation of effective short-term stabilization programs. Such conditionality in no way guarantees the reform of economic institutions and development strategies on which the economic prospects of Eastern Europe ultimately depend.

Appendix

THE BALASSA METHODOLOGY FOR ESTIMATING THE EFFECTS OF EXTERNAL SHOCKS¹

The balance-of-payments effects of external shocks in the form of the deterioration of the terms of trade and the slowdown of world demand for the exports of the newly industrializing developing countries are estimated by postulating a situation that would have obtained in the absence of external shocks. The same procedure is used in estimating the effects of policy responses to external shocks.

The point of departure for the analytical framework is the balance-of-payments identity, defined in terms of the resource gap that equals the deficit in merchandise trade, nonfactor services, and private transfers combined; the resource gap is financed by the net flow of external financing.

The resource gap is shown in Eqs. (A.1) and (A.2) for years 0 and 1, respectively. In the equations, M and X denote merchandise imports and exports valued in base-year (0) prices; P_{01}^M and P_{01}^X represent percentage changes in import and export prices between years 0 and 1; S refers to the balance of nonfactor services and private transfers, and R to the resource gap, valued in terms of current prices:

$$R_0 = M_0 - X_0 - S, \quad (\text{A.1})$$

$$R_1 = M(1 + P_{01}^M) - X_1(1 + P_{01}^X) - S_1. \quad (\text{A.2})$$

Taking the difference between Eqs. (A.2) and (A.1) and rearranging terms, we express changes in the resource gap between years 0 and 1 in Eq. (A.3) in terms of changes in import and export prices for the volume of imports and exports in period 1 ($P_{01}^M M_1 - P_{01}^X X_1$); changes in the volume of imports ($M_1 - M_0$); changes in the volume of exports ($X_1 - X_0$); and changes in the balance of nonfactor services and private transfers ($S_1 - S_0$):

¹This methodological description is taken from Balassa (1981a), pp. 147-150.

$$\begin{aligned}
 R_1 - R_0 &= (P_{01}^m M_1 - P_{01}^x X_1) + (M_1 - M_0) \\
 &\quad - (X_1 - X_0) - (S_1 - S_0). \tag{A.3}
 \end{aligned}$$

Equation (A.3) is modified if we examine the effects of policy actions taken at home and abroad. As a first step, we introduce hypothetical exports (X_1^h) that would be reached if the country in question maintained its base-period share in world markets. Differences between actual and hypothetical exports ($X_1 - X_1^h$), shown on the left-hand side of Eq. (A.4), are taken to have resulted from domestic policy actions as regards exports:

$$\begin{aligned}
 (R_1 - R_0) + (X_1 - X_1^h) &= (P_{01}^m M_1 - P_{01}^x X_1) + (M_1 - M_0) \\
 &\quad - (X_1^h - X_0) - (S_1 - S_0). \tag{A.4}
 \end{aligned}$$

Next, we introduce the effects of changes in foreign demand. For this purpose, we calculate the trend value of exports (X_1^t) on the assumptions that the trend of foreign export demand remained the same as in the base period and that the country under consideration maintained its export share unchanged. The difference between trend and hypothetical values ($X_1^t - X_1^h$), shown on the right-hand side of Eq. (A.5), thus represents the effects of the external shock due to changes in foreign demand for the country's export products (since this export shortfall adds to the deficit, it is shown with a positive sign):

$$\begin{aligned}
 (R_1 - R_0) + (X_1 - X_1^h) + (P_{01}^m M_1 - P_{01}^x X_1) + (X_1^t - X_1^h) \\
 + (M_1 - M_0) - (X_1^t - X_0) - (S_1 - S_0). \tag{A.5}
 \end{aligned}$$

In turn, hypothetical imports (M_1^h) are calculated for the actual growth rate of GNP in the country concerned on the assumption that the income elasticity of import demand remained the same as in the base period. Differences between hypothetical imports (M_1^h) and actual imports (M_1), shown on the left-hand side of Eq. (A.6), are taken to reflect the effects of import-substituting policies.

$$\begin{aligned}
 (R_1 - R_0) + (X_1 - X_1^h) + (M_1^h - M_1) &= (P_{01}^m - P_{01}^m M_1 - P_{01}^x X_1) \\
 + (X_1^t - X_1^h) + (M_1^h - M_0) - (X_1^t - X_0) - (S_1 - S_0). \tag{A.6}
 \end{aligned}$$

Furthermore, we calculate the trend value of imports on the assumptions that the income elasticity of import demand and the rate of growth of GNP remained the same as in the base period (i.e., no change in the rate of growth of imports). Differences between the trend value of imports and hypothetical imports ($M_1^t - M_1^h$), shown on the left-hand side of Eq. (A.7), are assumed to reflect the effects of changes in the rate of growth of GNP on imports:

$$\begin{aligned}
 & (R_1 - R_0) + (X_1 - X_1^h) + (M_1^h - M_1) + (M_1^t - M_1^h) \\
 & - (P_{01}^m M_1 - P_{01}^x X_1) + (X_1^t - X_1^h) + (M_1^t - M_0) \\
 & - (X_1^t - X_0) - (S_1 - S_0) . \tag{A.7}
 \end{aligned}$$

The difference between the trend values for imports and exports, adjusted for the actual balance of nonfactor services and private transfers, equals the amount of net external financing that would have been necessary in the absence of external shocks and policy reactions to these shocks (the trend value of the resource gap, R_1^t). In turn, the sum of the differences between trend values and actual values of imports and exports equals the difference between the trend value of the resource gap and its actual value in the base year.

Introducing the trend value of the resource gap and rearranging terms, we show the excess of the actual resource gap over its trend value on the left-hand side of Eq. (A.8). This is taken to represent the additional inflow of external funds associated with the balance-of-payments effects of external shocks (additional net external financing):

$$\begin{aligned}
 & (R_1 - R_1^t) + (X_1 - X_1^h) + (M_1^h - M_1) + (M_1^t - M_1^h) \\
 & - (P_{01}^m M_1 - P_{01}^x X_1) + (X_1^t - X_1^h) + (M_1^t - M_0) \\
 & - (X_1^t - X_0) - (S_1 - S_0) - (R_1^t - R_0) . \tag{A.8}
 \end{aligned}$$

The last term on the right-hand side of Eq. (A.8) equals the sum of the previous three terms and indicates the amount of additional net external financing that would have been necessary in the absence of external shocks if past trends continued, over and above the inflow of external funds in the base year. The term is shown with a negative sign, so that the last four terms add up to zero and can be omitted.

Under the assumption that the country in question is a price-taker in world markets, the right-hand side of Eq. (A.8) is taken to indicate the effects of external shocks on the balance of payments. This is decomposed into effects on the terms of trade ($P_{01}^m M_1 - P_{01}^x X_1$) and on export volume ($X_1^e - X_1^h$). The former is further decomposed into a pure terms-of-trade effect calculated on the assumption of balanced trade in base-year prices ($P_{01}^m - P_{01}^x$) X_1 , and the effects of increased import prices on unbalanced trade ($M_1 - X_1$) P_{01}^m .

In turn, the left-hand side of Eq. (A.8) consists of terms representing policy responses to external shocks, including additional net external financing ($R_1 - R_1^e$), increases in the country's export share in world markets ($X_1 - X_1^h$), import substitution ($M_1^h - M_1$), and the effects of lower GNP growth rates on the country's imports ($M_1^e - M_1^h$).

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